

# The Commercial Car Journal

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*Let 'Em Be!*

## When "National" Accounts Are "No Account" for You

Sometimes They "Buy"—  
Generally They "Rent"

**Y**EARS ago when the truck industry was younger and competition not as keen as now, all the sales secured in the truck dealer's territory were credited to him. All the business he got was his.

But as the buyers of large fleets of trucks came into the market, special terms and inducements made by the factory direct became the vogue for securing this business and usually the dealer's commission was the first concession to offer them.

One manufacturer after another started what is generally termed a "National Account" department. In other lines it would come under the classification of "Wholesale" business. Under the "National Account" status the customer obtains the trucks at a reduction of from 20 to 40 per cent on the advertised list price. The dealer may be given a five per cent commission. Sometimes he doesn't get that.

There is a big difference, however, between the factory that gives its dealers a square deal on the national account business and the factory that places every Dick, Tom and Harry on the "national buyer" list on the slightest pretext. Such a manufacturer cannot hope to surround himself with a representative, loyal sales organization, because just about the time the dealer has made a reputation with his truck in his terri-

tory, the repeat business, which the dealer should get, is taken away from him.

The small commission which the manufacturer pays the dealer on national accounts does not compensate him considering the amount of time he must give to such accounts and the service he is expected to render.

From the foregoing the reader will surmise that we are trying to make a case in favor of the dealer by eliminating the national account or wholesale business.

Nothing of the sort. There are some large fleet owners who buy in large quantities, and who are entitled to price concessions as quantity buyers. Such concerns are entitled to a wholesale price or a sliding scale of discounts, but that should not include the buyer of a few trucks nor should it exclude the dealer from the transaction. If a man goes to a reputable clothing store and buys two or three suits of clothes at one time, does he expect a special discount? He doesn't and he doesn't get it.

Why are distributors and dealers laying off fleet owner business, preferring to sell only to customers who have only use for one or two trucks at the most?

Because these distributors and dealers know that the fleet owner business has been made unprofitable for them.

And there are more reasons than simply the small commission they get. Even if **THEY GOT ALL THE COMMISSION** it's a question whether the business would pay them because of the indefinite price policy which many manufacturers have adopted these days.

What is actually happening is that the fleet owner becomes a direct competitor of the dealer. The fleet owner first of all gets the dealer's commission and he buys his parts direct from the factory or elsewhere, although the dealer is expected to handle parts for the benefit of the users, fleet owners included.

#### Does the Manufacturer Profit?

Analyzing this we believe that in the long run the manufacturer is losing out by his over anxiousness in placing too many of his customers on the "national account" list. It makes it difficult for him to establish a definite list price because when you figure the business methods involved in handling the average fleet business, **it's a question whether the customer is really "buying" trucks or only "renting" them.**

In most cases **he is "renting" them.**

The explanation is simple.

The fleet owner takes advantage of the national account by getting say 40 per cent off the list price. Assume that it's a truck listing at \$4000. The actual cost of the truck to the customer is \$2400. Suppose he runs the truck for four years at the most and trades it in. Of course when this happens he figures it as a \$4000 truck and that he ought to get at least a \$1000 on it. But supposing he is allowed \$800. That brings the original investment down to \$1600, which spread over the four years equals \$400 a year.

**The question is does he really buy the truck or is he only renting it?**

When the dealer tries to figure in on such a deal he simply cannot stay in business. In fact that is just what is making it extremely difficult for the truck dealer to sell trucks at a list price when the factory encourages such business.

Would it not be more profitable for the truck manufacturer and his dealers if a more definite line of demarcation were established as to what really constitutes a "national account" or a "wholesale buyer?"

Nothing demoralizes business faster than cut prices and having no definite price—practices which give one customer an advantage over another.

Many dealers are carrying national accounts of their own but they do not realize it. Such ac-

counts are the ones they make by their own foolhardiness when they give all their profits away by making ridiculous allowances on the trade-in. There is not much difference between giving the owner the benefit of the dealer's commission on a "national account" and making an exceptional allowance on the trade-in.

Therefore the thing we want to impress upon the dealer here, is that if he is willing to sacrifice his legitimate commission—his profit—on a truck deal, he is only encouraging the owner to become a national buyer. If the owner finds that he can get a big rake off from the dealer on one or two trucks, the next time he needs a few more he sees no reason why he shouldn't buy direct—because he thinks he is in the "national buyer" class.

Seldom does the factory ship the trucks direct to the owner! Seldom does the owner take care of the numerous details incurred in getting the vehicles through from the factory! No—the dealer does that. The owner expects him to assume the responsibility for those trucks. If something goes wrong the dealer has to right it. He is put to a great deal of trouble for which he gets no remuneration.

The dealer gains nothing in soliciting business of this kind, because usually the whole deal hinges around the question of price and trade-ins.

Does it help the dealer by having it generally known in his territory that the factory he represents is placing truck buyers indiscriminately on the wholesale list?

If it is the practice of the manufacturer to grab off the cream of the business after the dealer has spent years in building up a good dealership, how does that manufacturer expect to keep his dealer organization together?

#### Does the Dealer Profit?

Does not the placing of truck buyers promiscuously on the wholesale list make it extremely difficult for the dealer to sell his individual customers on the list price basis?

It is the abuse which has accompanied the "national account" business which makes it impossible for the dealer to get any profit out of such business.

No wonder some dealers refused to sell to concerns that are liable to graduate into the national account class. The dealer can employ his energy to better advantage by developing new prospects rather than getting mixed up in price dickering deals.

It is **then** that the "national" accounts become **"no account"** for you!

# BEAUTIFUL!

## BUT DISAPPOINTING

### *N. A. C. C. (New York) Silver Jubilee Show Failed to Recognize the Latest and Most Talked of Unit of Highway Transportation*

By ALBERT G. METZ\*

**T**WENTY-FIVE years growth of a leading industry was climaxed by the Silver Jubilee Show at New York—a tribute to the leaders who pioneered in the great industry that furnishes highway transportation to the nation, yes—the whole world.

This year's show at New York was undoubtedly the most brilliant of all shows the industry has ever seen. From an artistic standpoint it was a wonderful spectacle. There were somewhat fewer exhibitors than last year, but that must be expected, especially after the stabilization which has become evident within the industry during the past year.

This year the National Show at New York was not over-subscribed for space. There was plenty of room available for more exhibits. The balcony of the 258th Field Artillery Armory in the Bronx was not given over to accessory and parts exhibits as in former years. Instead the main floor of that immense armory comfortably accommodated all the exhibits with plenty of room to spare. The result was an ideal show from the visitors' standpoint. He had lots of elbow room. He could examine the cars from all angles. The trade idea went over big as was evidenced by the large number of dealers present, but it is regrettable that the manufacturers did not take this opportunity more seriously. Taken altogether the show was a huge success from a passenger car standpoint.

**BUT IT WAS NOT COMPLETE—  
SOMETHING WAS LACKING!**

\*Managing Editor Commercial Car Journal and Motor Transport.

The national shows in the future will probably be patronized by fewer passenger car manufacturers and the nature of the exhibits will be more varied when the show is opened to other than passenger car manufacturers.

National Automobile Show week is a great stimulus to the automotive industry. During New York show week there are dealers' meetings, special exhibits at the hotels, banquets, dinners, luncheons, and so forth, which taken all together make the week of the show an important yearly event in the lives of many individuals connected with the automotive industry.

The show itself is an institution of learning presenting new developments and giving the public an opportunity to study first hand the new models which have been rumored about for months. It gives the manufacturer an opportunity to study the desires and wants of the public. It is the one time during the year when the trade and daily press heralds far and wide the new developments of the automobile industry. Everybody talks about the National Shows. They are a source of inspiration to the salesman, the dealer and manufacturer. It starts the industry off for another year.

Appreciating all these things, doesn't it seem logical that the time has arrived for many of the manufacturers who are members of the National Automobile Chamber of Commerce, to realize that they are missing the best opportunities of the year.

The manufacturer we have in mind particularly is the—**MOTOR BUS MANUFACTURER!**

Today the motorbus stands on the threshold of big development. The past year has seen a number of new manufacturers spring into existence. More development has been recorded in the motor bus branch of the industry during the past year than in passenger cars and trucks. And the truck industry is gradually absorbing some of that development.

What the national shows have done for the passenger car industry they can also accomplish for the motor bus.

How?

By setting aside sufficient space at the 1926 National Shows to give every member of the National Automobile Chamber of Commerce as much space as he needs to show all the motor bus models he builds. If the show is held in the same building again next year there will be ample room to accommodate them all.

The motor bus exhibit held in connection with the American Electric Railway Association's show was a very creditable affair. At the Boston show motor buses have been shown in considerable numbers for the past four years and at many of the local dealer's shows throughout the country motor buses are being featured.

The trade days at the New York show drew over 6000 dealers and trade representatives each day. They are the men who are going to sell the big bulk of the

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# Vocational Plan Best in Selling Small Trucks

## Salesmen Specialize on Certain Groups Juniors Canvass and Work With Seniors

By D. G. BAIRD

**G**ROUPING prospects for light trucks according to vocations rather than location, assigning salesmen to specialize on certain groups, and employing junior salesmen to canvass and to work with the seniors has resulted in materially increasing sales for the Federal-Detroit Branch and has proved much more satisfactory in many ways than the former plan of assigning salesmen to certain territories, according to Fred J. Storm, general manager.

This branch employs four light truck salesmen and four junior salesmen, in addition to a number of heavy-duty truck salesmen, and in introducing the vocational plan, an effort was made to group all prospects for light trucks in four classes, one for each of the four light truck salesmen. Industries in which both light and heavy trucks are commonly used were excluded from the vocational groups and were given over to the heavy truck salesmen.

### Arranged in Four Groups

The first step was to go through the city and telephone directories and list all those who might be expected to use light trucks in their business. These were then classified and arranged in four groups, the nature of each prospect's business determining in which group he should be placed. The classifications were necessarily broad, but the four groups formed were, roughly, the build-

ing group, the food group, the laundry group, and the small stores group.

In the building group were included such prospects as plasterers, plumbers, electricians, painting contractors, garage builders, wall paper dealers, painter's supply dealers, and builder's supply houses.

In the food group were included both wholesale and retail bakeries, sausage manufacturers and peddlers, small meat packers, caterers, baker's supply houses, restaurants, and restaurant supply houses, and so on.

### INCREASE LIGHT TRUCK SALES BY:

Grouping prospects by vocation and not by location.

Assigning salesmen to specialize on certain groups.

Employing junior salesmen to canvass and work with seniors.

### WHY?

Because the light truck is broader and more specialized.

Each salesman is equipped by familiarity to intelligently analyze the transportation needs of his prospect.

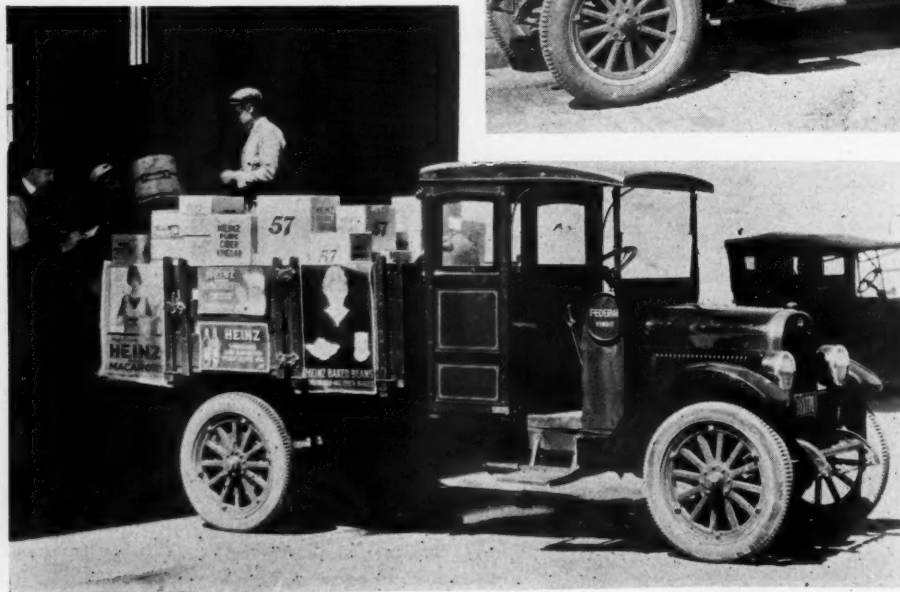
The product is presented and sold correctly.

Salesmen are saved the ridicule of ignorance.

In the laundry group came laundries, dry cleaners, carpet cleaners, furriers, and allied lines.

In the small stores group were such businesses as cigars and tobacco, confectionery, confectioners' supply, retail hardware, electrical fixtures and appliances, radio supply, grocery, and butcher shop.

In addition to these, there were many



Whether It's Groceries, Talking Machines or What Not, Every Business Has Its Peculiarities and the Wants of the Truck Buyer Must be Studied.

miscellaneous ones that were included in whatever groups they seemed to fit best.

One salesman was placed permanently in charge of each group and was expected to familiarize himself not only with the prospects in his field, but with their problems, their aims, their shortcomings, and their trade terms, as well.

"The number of different kinds of industries or businesses that use heavy-duty trucks is comparatively small," as Mr. Storm points out, "and it is feasible for a



heavy truck salesman to secure a fairly good general knowledge of the problems of all the industries he serves, but the field of the light truck is so broad that specialization becomes necessary, if the salesman is to be prepared to meet his prospects on common ground.

"We can't very well employ a salesman for every industry, but we can narrow the field considerably by grouping all such prospects according to the general character of their business, such as building, food, cleaning, and retailing. Not only does this narrow the field, but in each group there is some one leading business and it is from those engaged in these leading lines that the salesmen may expect to secure most of their prospects.

"Each salesman has his definite group of industries, or vocations, and it is expected that he will familiarize himself as rapidly as possible with these industries or vocations, so that he may be prepared to analyze his prospects' transportation problems intelligently and to present our product in the way that will make the strongest appeal to each prospect.

"Every industry and trade has its own peculiar problems, its technical terms, and its slang, and unless the salesman is familiar with these, he may not only miss many excellent opportunities, but he may make himself ridiculous as well.

"One of our salesmen was talking with one retailer recently, for example, when something was said about a 'bundle jumper.' He had no idea in the world what a bundle jumper was, but he wasn't long in finding out. A little later, in talking with another prospect, this same salesman suggested that if he, the prospect, employed a bundle jumper, a certain feature of our light truck would prove very convenient and helpful. The prospect registered interest the moment the subject of a bundle jumper was mentioned and the sale was made on that very point.

#### Birds of a Feather

"Another very good point in favor of the vocational plan is the fact that men engaged in the same line of business know one another better and come in contact with one another more than do those situated near one another, but engaged in

different lines of business. A salesman calling on all prospects in a geographical zone may tell the butcher that he sold a truck to the baker just a block away, but the butcher doesn't know the baker personally and, furthermore, he isn't interested in the bakery business. If, on the other hand, a salesman calling on certain industries tells a man in one industry that he sold a truck to another man in the same industry, but on the other side of town, it is very likely that the prospect will at least know of the man mentioned and he will at least be favorably influenced by the statement that others in his line are buying this truck.

#### A Clinching Argument

"Some time ago, one of our salesmen sold a light truck to a barbers' supply house. Later on, we introduced the vocational plan and a different salesman got the barbers' supply houses in his group. One day he was trying to interest one barbers' supply dealer in a truck, when this other dealer who had previously bought one of the trucks walked in and stood listening to the conversation. After a time, the prospect asked him whether he knew anything about the truck, whereupon he pointed to the one he had just parked in front of the store.

"The salesman got that order, all right, because the prospect was a live one and the other dealer was enthusiastic about his truck, but the point is this: If we had been using the vocational plan when the first barbers' supply houses was sold, this salesman would have known the dealer, would have referred to him as a satisfied owner, and when he walked in, would have been prepared to say, 'Hello there! Mr. Brown—just the man we're speaking of. How's your truck? Tell Mr. James here exactly what you think of it,' and so on.

"We just recently sold a florist a light truck and put a beautiful body and paint job on it. When the job was complete the salesman who has the florists in his group got in it and drove around to all the florists shops in the city, not only telling them that this florist had bought one of the trucks, but actually showing them what a beautiful job it was."

The city of Detroit is a big territory and there are many prospects in each of the four groups selected by the Federal branch; too many, in fact, for any one salesman to handle alone. The number is, therefore, reduced and much time and labor is saved the salesmen by employing junior salesmen to canvass and weed out the wheat from the chaff.

There are about 100 laundries in the city, for example, and probably not more than 60 of these own trucks, while still fewer are likely to be in the market for new trucks at any one time. A junior salesman goes out and canvasses all the laundries, gathering the usual information. He learns just which of them own trucks, how many they own, what kind, when they will be in the market for new equipment, and so on. He canvasses the cleaners and dyers, the carpet cleaners, the furriers, and others, gathering the same information weeding out the live prospects from those who are not in the market and will not be for some time to come.

Junior salesmen work with and under the same senior salesmen all the time and the seniors are made responsible for the performance and development of their juniors. Thus, if a senior should complain to the manager that he is short of prospects, the manager would immediately ask why his junior was not securing enough prospects for him. Again, if a junior has reported that a prospect will probably be in the market about 60 days later and the senior thinks it well to call back within 30 days, but hasn't the time to make the call himself, he may send the junior back instead, at his discretion.

Juniors call back with their seniors and not only look and listen to "learn how its done," but also assist in making the sale as much as they are able. The theory is that "two heads are better than one."

#### Answer General Questions

Juniors are required to know enough about the light truck to answer general questions that they may be asked, but they make no effort to sell alone and in case they are asked technical questions, they are expected to suggest that they

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**SALESMAN'S FIRST REPORT**

ORIGINAL

Name \_\_\_\_\_ Date \_\_\_\_\_

Address \_\_\_\_\_

Business \_\_\_\_\_

Wanted \_\_\_\_\_

Trade in \_\_\_\_\_

Buying When? Immediately 30 Days 60 Days 90 Days If Later \_\_\_\_\_

Must be seen When? \_\_\_\_\_

Favors What Make of Truck \_\_\_\_\_

Present Equipment—(See Other Side) \_\_\_\_\_

Salesman \_\_\_\_\_

**PROSPECT INFORMATION**

ORIGINAL

Name \_\_\_\_\_ Date \_\_\_\_\_

Address \_\_\_\_\_

Interview Mr. \_\_\_\_\_

Remarks: \_\_\_\_\_

Name of Party who gave Information \_\_\_\_\_

For Salesman \_\_\_\_\_ Date Allocated \_\_\_\_\_

**REPORT ON ORDER LOST**

Name \_\_\_\_\_

Address \_\_\_\_\_

Business \_\_\_\_\_

Buyer's Name \_\_\_\_\_

We Lost Order For \_\_\_\_\_

To \_\_\_\_\_ (Name or Size of Truck)

Remarks \_\_\_\_\_ (Name of Competitor)

Price \_\_\_\_\_

Date \_\_\_\_\_

Salesman \_\_\_\_\_

Used in Recording

Accurate Sales Data

# Getting and Giving Service

## What an Independent Repair Shop Owner Thinks About the Service He Gets From the Dealer's Service Station. Why He Prefers to Buy Parts From the Jobber

By an Independent Repair Shop Man

**T**HE service I can give depends upon the service I can get. My customers look to me to do all the repair work needed on their trucks and cars. They don't ask where I go for parts or where I take work to be done, which I cannot do myself. But they bring the job to me and they hold me responsible for every detail of the work.

Knowing where to get parts quickly is very important. If it takes me a week to get a certain part and the man down the street knows a place where he can get the same part in a day, it isn't hard to figure where the repair work in this town is going.

Same rule applies to outside work. If the man I take my cylinder reboring jobs to does a bad job, who gets the blame? Me, of course, the customer doesn't know the regrinder but he does know me. And he tells me what he thinks, especially when anything is wrong.

And believe me the man in the little independent repair shop needs all the help he can get. He has troubles enough and anything and anybody who helps him is welcome.

### Problems of Smaller Shops

The proprietor of a country repair shop was quite willing to give his ideas about the problems of the smaller shops and, speaking from experience, to make some criticisms and also some suggestions.

"The only service a lot of trucks and passenger cars ever get is from the little shops like mine," he continued. "Some of the factory service managers think that their authorized dealers can furnish all the service needed and that they should furnish all the service needed.

Well, there are thousand of trucks and cars, too, belonging to men who live miles from a dealer's establishment. The owner will not drive fifty or a hundred miles to have a little work done just because some executive out at the factory recommends that all service work be done at dealer's establishments.

No, sir. Service has to be supplied right where it is needed and that is near home. There are twelve different makes of trucks in use right in this town and there are only two truck dealers. Where shall the other ten makes go for service. To Milton, forty miles away, hardly likely, is it? They come to me and the other repair shop men and we take care of them.

And do we get assistance and co-operation from the distributors and factory branches of these lines of trucks? You would think that they would do everything they could help us, as we are keeping their trucks running and keeping their

owners satisfied. You would think so but they don't. That is in many cases.

When it comes to getting parts we have our troubles. We call on the phone and ask that a certain part be sent right away by parcel post, as parcel post is one day quicker than express to this little town. Do they come by parcel post? No. Express brings them in. The answer is that all the shipping clerk has to do to send by express is to hang out a sign and the truck calls. To ship by parcel post he has to weigh the package, pay the postage and then send it down to the post office in his city. It is all charged up to us anyway but it is too much trouble and so we have to keep the job waiting until the parts get here.

### This Repair Man Says:

"When it comes to getting parts, we have our troubles.

"Service has to be supplied right where it is needed and that is near home.

"I can't understand why these large places are not just as anxious to sell parts as they are to sell trucks and cars."

### The Article Tells Why He Buys From the Jobber

If there are a lot of parts to get, I don't wait for either parcel post or express I drive right in to town and get them. And am I welcome at the parts departments? Just about as welcome as the tax collector, it seems.

### The Nerve-Wracking Wait

I go to one of parts department and find a line of about a dozen men and boys waiting to be attended to. There is a wonderful display of parts, all arranged in steel bins, one of the best laid out part stocks in the industry, I am told. And who is waiting on us? Who is selling parts from that \$150,000 stock? A whole flock of clerks you think? Wrong again. One young man, so young that he never heard of the "Winton Bullet" and if he ever does he will think it has some things to do with firearms. He brings out the parts as the customer ahead of the cash register names them. But this one does not know just what he does want, he has to make motions and describe the parts he wants and just what they do. He

is evidently an owner, attempting some repairs himself. Meanwhile I clutch a list of parts wanted right in my hand and wait. The line moves up a few inches at a time and time goes on. I am wondering if I will get home before the shop closes and if the work I left will keep the men going until I get back. They are expecting me early in the afternoon.

The hard working stock clerk keeps on the job, never rushing or never stopping. Finally after two hours it comes my turn. There are only two in back of me and it is a few minutes of the time to quit. I get the parts all right and the clerk starts to make out the sales slip. "Dealer?" he asks. "No, repair shop," I answer. The bill is made out at net retail price and I pay it and hurry away.

The loss in the discount is not so much but the delay of two hours being waited on is a sure loss. And how can I charge up that two hours on the job? The owner knows about how long it takes to do the job and if I charge for all of my time while waiting for parts he will howl. And if I don't charge the time, then I am the loser.

### Idle Salesmen; Busy Parts Boy

I can't understand why these large places are not just as anxious to sell parts as they are to sell trucks or cars. The profit on parts is more than that on cars and the business is big enough to make it worth while. But that place I have just been telling you about has three salesmen on the floor selling cars. I went in there to ask just where the parts department was and all three of them started for me, thinking that I was a prospect for a car. When they found out that I only wanted parts they were not interested at all. And yet I might do more business with them than a car owner who buys a car every three years.

They spend a lot of money in advertising and are driving their sales department for all it is worth. Loudly, they boast of the wonderful stock of parts they have and of the way it is stored. And they employ one man, or boy, rather, to sell the parts. They pay no more attention to a repairshop man coming in for a hundred or two dollars' worth of parts than they do to an owner buying a new hub cap.

And I have about the same experience in several other places I go to. Wait, wait, wait. There are some exceptions and it is a pleasure to do business with these. Plenty of men to sell us parts, men who know the job and will do anything to oblige us. And now that the jobbers are carrying a line of gaskets, and engine

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# Is the Balloon Tire the Coming Thing on Motor Trucks?

*Here Are a Few Opinions Direct From Tire Makers.  
Load and Inflation Pressures Must be Carefully Watched*

**W**ILL the balloon tire become as popular on motor trucks as it has on passenger cars? This is the sum and substance of a questionnaire which we recently placed before the manufacturers of pneumatic tires to ascertain just what the tire manufacturers themselves think about the balloon tires in commercial car service.

Many answers were received which indicated the makers are not yet in a position to make authoritative statements, based on actual experimental work or tests.

Most of the tire manufacturers are interested in the development of the balloon tire. But the balloon tire has come so suddenly in connection with the passenger car, "that the commercial car has been more or less overlooked," states one of the largest tire manufacturers.

Continuing, this manufacturer says, "That the balloon idea can be developed into heavier truck service has been proven. Certain development and experimental work is now being done on this and definite data and figures may be available within the next 12 months. While we have done some experimental work on the light delivery wagon, it has not been sufficient to give out detailed data that would convince the public of its practicality. In our own mind **we are sure that it is practical**, that within the next few months sufficient tests will be conducted to justify definite claims for this service."

So that the reader may get the opinions just as we received them from the tire companies we are appending extracts from some of the letters received.

"We would say that very few trucks or buses today are equipped with balloons, but there has been **considerable interest displayed in balloons by the truck and bus operators in various sections of the country**. Whether a vehicle is used for commercial work or the usual work of a passenger car, the balloons will be entirely feasible providing the tire manufacturer's load-carrying schedule is regarded as a guide with respect to tire sizes.

"In other words, a 7.30 balloon tire rated to carry 1,700 pounds, will do a balloon tire's job on a passenger car, a truck or a bus, providing that load limit is respected. We have found one of our dealers equipping the front ends of 16-passenger buses with 7.30 balloons inflated to 45 pound air pressure, and although these tires are overloaded, the comparatively high air pressure has enabled the bus operators to get well over 20,000 miles of service as front equipment. The same buses are equipped with heavy duty tires on the rear, where the load is much too great for any balloons built today, especially

when it is remembered that due to the great deflection and distortion of the balloons, it is impossible to dual them.

"Of course, a great many of the lighter weight buses can be equipped with balloons all around and assure the same velvety smoothness of operation that is secured in passenger car service."

"We have discouraged the use of balloon tires on delivery trucks because of the great liability to overload. Pressures and loads have to be watched much more closely with balloon tires than with high pressure and there are very few, if any, delivery trucks that do not load beyond their capacity."

"Our experience thus far on balloon tires for commercial equipment is very limited. We have tried out several outfits on big commercial delivery accounts where the White delivery one and one-half ton jobs were being used. Up to date these tires have been in service about two months—no up-to-the-minute reports.

"We have also tried them out on Reo buses in the 20 passenger class on the front wheels with rather indifferent success on the 4 ply 7.30 but with very good results on the 6 ply 6.60 type. On such work as the Dodge delivery where 6 ply 6.20 tires are used they show up wonderfully well where they receive the necessary attention but the average driver on most of this class of work is **extremely careless of his air pressure** and this question of air pressure on balloon tires requires more attention than the average driver of any car realizes."

"It has been our impression that the balloon construction would not work out advantageously on trucks due to the various loads that trucks are called upon to carry, and to strengthen our opinion in that direction we had reduced the number of plies from ten to eight in our 36x6 heavy duty truck tire. We noticed that the carcass was not giving the mileage we had previously obtained and changed our specifications on our 36x6 truck tire back to ten-ply. Therefore, we are under the impression and are of the opinion that the balloon tire with the lower inflation and lighter construction will not be successful on trucks.

"Another fact we have taken into consideration is that the four-ply balloon tire in the larger sizes proved a failure and that now all large size balloon tires, except the 4.40, are being made in six-ply by most all the companies, which is con-

clusive proof that the original balloon construction was erroneous and believe that the balloon tire is not the proper equipment for trucks."

"Since there is nothing to be received from balloon tires in the way of speed, freedom of punctures, etc., we cannot at the present time see where they would be of any advantage on a delivery truck. On ambulances, etc., it is possible that balloon tires would add enough to the comfort of the conveyances to make them desirable, but our experience in the truck tire business is that a truck owner wants the strongest and toughest tire that he can buy and is willing to sacrifice comfort for economy."

"We find that our **balloon tires are giving good service on light trucks** and as in our opinion a tire which is overloaded has to stand the same strain as one which might be underinflated and in equipping trucks with balloon tires it is **possible to haul classes of merchandise which could not be transported** in a satisfactory way on high pressure or solid tires. For example, a Ford truck with its heavy spring construction would not be considered satisfactory for hauling small fruits and berries over rough roads with ordinary pressure or solid tires. However, with the large size balloons running at a low pressure it is possible to send forth merchandise of this kind **without any serious effect on the load**.

"We made several tests on this during the summer months and it proves out very satisfactory.

"Another point in favor of the large balloon tires on a light truck is that the farmer can drive the truck over loose ground without danger of the wheels cutting through such as would be the case in using a solid tire or a small high pressure tire.

"We believe the balloon tire will be used to a considerable extent in motor truck service eventually, however, at present it is a matter of convincing the consumer that even with the thinner wall construction, as is customary in building balloons, the balloon tire will actually stand to be driven under an overloaded condition to a greater extent as it would be with an ordinary tire."

**F**ROM the foregoing letters the reader will undoubtedly get the impression that the tire manufacturers are not quite certain as to the adaptability of the balloon tire to motor truck service. This is



primarily due to the fact that the manufacturers are waiting to see how present usage of balloons on passenger cars will work out in the hands of the public.

Balloon tires are by no means perfected. There are many problems still confronting the manufacturers but the present year with practically 80 per cent of the passenger cars coming through with balloons will give the tire manufacturers plenty of opportunity to check up on performance and public acceptance.

It is not the purpose of this article to go into a resume of the technical details concerning balloon tire construction and performance. The balloon tire is doing much to bring about better design in passenger cars. It is also interesting to note that manufacturers are rapidly overcoming some of the deficiencies in car design which have heretofore gone by unnoticed. The balloon tire is here to stay and its general adaptation on motor trucks is just a matter of time.

A careful reading of the letters quoted above will show distinctly why some tire

manufacturers hesitate to recommend the balloon tire for truck service. It is not because the balloon tire is not as efficient on trucks as passenger cars, but simply because so many truck owners do not give their tire equipment even passing attention. Checking the air pressure at regular intervals is seldom done. On top of this the vehicle is greatly overloaded, a condition which will quickly shorten the life of balloon tires.

It is these two factors which are retarding intensive adaptation of the balloon tire to commercial cars. This condition will change, however, when owners are actually sold on the advantages of the balloon tire for commercial service.

From a utility standpoint the balloon tire is just as practical for motor trucks as it is for the passenger car, provided the conditions which the manufacturer sets forth are complied with.

The advantages of the balloon tire in commercial work are manifold.

Every light delivery car owner today is a potential prospect for the balloon tire.

The mere fact that the balloon tire makes it possible to increase the average driving speed, especially when hauling fragile loads, is one of the main reasons why the balloon tire will be eventually adopted in this class of hauling.

The anti-skidding qualities of the balloon tire makes it possible for the driver to keep up his delivery schedule during rainy weather just as well as on clear days.

The vibration absorbing quality of the balloon tire lengthens the life of the vehicle and promotes driver comfort. In this respect a prominent department store executive states, "We believe that the upkeep of our trucks will be less due to better cushioning with balloon tires and we are also of the opinion that the merchandize rides better, thereby minimizing damage and loss thereto. Furthermore the easy riding qualities of the truck appeal to the driver from a driving standpoint and should help to cut down our labor turnover."

## Selling Trucks to Horse Owners

### How Teaming Cost Figures May Mislead

**R**EAL team operating costs are the most elusive figures in the world, because horse operators rarely keep complete costs as do, or should, motor transport operators. Therefore, when the truck salesman compares his operating figures with those provided by the team owner he is occasionally at a disadvantage. Sales resistance is increased when the salesman cannot put his finger on the missing items, or has no idea of what teaming really costs at the present day.

Occasionally too, one hears whispers of concerns who have tried out motor trucking and have gone back to horses, or are thinking of doing so, for various reasons. Operators on the New York wharves are the most often quoted example. This and many other cases are the results of pure misconception and ignorance of true costs.

It may be laid down that mechanical transport can show a saving over horse transport in the majority of cases where the mileage is small and the stops frequent.

In all large and near-large cities the cost of land is very high, yet the transport vehicles, and horses particularly, must be located within a reasonable distance of the working points. A barn with accommodation for wagons and teams will have to have twice the floor area at least to an equal number of trucks. Often of course a smaller number of trucks can be made to do the same work as the teams.

Barn rent is therefore one of the elusive items to be watched. If the barn is owned by the operator the interest on investment should be calculated, and on today's value, not what was paid for it fifty years ago. Here is a list of the essential items, with approximately average figures for large cities.

#### Horse Expense: (per day)

Barn rent, per horse	\$0.45
Labor (day and night)	.50
Feed and bedding	.75
Veterinary	.04
Shoeing	.25
Harness Repairs	.05
License	.02
Depreciation—\$250 @ 20%	.17

Daily cost per horse	\$2.23
Daily cost per team	\$4.46

#### Wagon Expense (per day)

Rent	\$0.75
Repairs	.33
Insurance	.30
Depreciation—\$740 @ 10%	.25
Miscellaneous	.30
Driver's wages @ \$5.50	5.50
	7.43

Total expense..... \$11.89

A good check on these totals is a charge for team hire of \$12.50 per day.

The big feature of this figure is the important fact that they demonstrate. The

cost remains practically the same whether the team is working or standing idle.

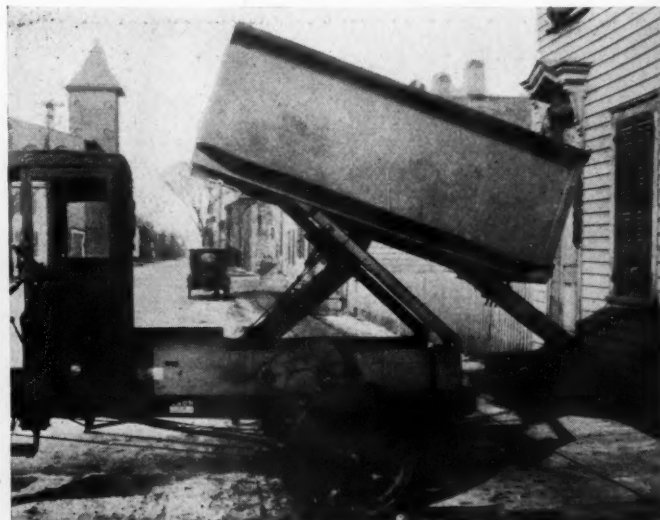
As far as operation in the congested traffic of big cities is concerned, there is little doubt that the electric truck can always beat the horse, the gasoline truck very often. The truck can average 7 to 8 miles an hour against the team's 2½ m. p. h., and that may make a difference of several trips a day.

It will be noticed that there is an item of 30 cents per day per team and wagon. This covers all the little incidentals which cannot be ignored, such as blankets, harness soap, wagon grease, salt, sponges, etc.—an easily missed group of items which make an appreciable total.

Finally it is to be expected that during the next few years, traffic conditions in business centers will make it imperative that very slow moving traffic, and obstructive traffic, be prohibited in business areas. Los Angeles has already taken this step and it may be anticipated that other large cities will sooner or later follow this excellent example. Then will come the truck salesman's opportunity.

#### Woonsocket Two-Ton Hand Operated, High Lift Body and Hoist for Fords.

The equipment can be used either as a plain dump by releasing a small cable at the front, or can be used as a high dump as shown. All parts are interchangeable. The body can be provided to meet any chassis extension requirement. It is made by the Woonsocket Mfg. Co., Woonsocket, R. I.



# Changing Annoyance Into Profit

## *Explaining Some of the Mistakes Generally Made in Connection With the Sale of a Truck and the Body Equipment That Should Go With It.*

### **Application of Plain Horse-Sense and Cold Facts Should Bring Every Obstinate Head Out of the Sand**

**T**HE Automotive Industry as a whole presents a very interesting subject for study and in doing so some very peculiar things will be observed. Because I have been more than passably interested in commercial car and truck bodies in the past few years, I wish to draw some comparisons and to point out some mistakes that are generally made in connection with the sale of the truck chassis and the body equipment that should be sold with it.

Not long ago I called on a Ford Agency in one of our large cities. The sales manager told me that at his morning sales meetings there was as much time devoted in educating his salesmen in construction design and adaptability of various types of standard "ready to mount" bodies for both the Ford Model T and Model TT chassis as was devoted directly to the chassis itself.

Each of his salesmen carried complete data, specifications and prices of standard bodies and cabs of styles and types that would cover any requirements that the customer or prospective truck purchaser could want. The salesman knew where these bodies were obtainable and consequently knew just when he could promise delivery, which was usually within four hours after the order was received.

It was interesting to learn that the profits derived from the sales of cab and body equipment amounted to 40 per cent of what the same department showed on the sale of the chassis. Forty per cent additional profit with no additional overhead is not to be scoffed at.

#### **A Viewpoint in Direct Contrast**

Its worth considering and yet, their **next door neighbor**, a well known heavy duty truck distributor, held an entirely different viewpoint. Their manager said, "Mr. Darling, bodies do not interest us in the least, in fact, we try to keep as far away from having anything to do with bodies as we possibly can. We are in the chassis business and that's all we want to sell. We turn our customers over to the several good custom body builders here and they take care of the cab and body for our customer."

The writer said, "Well, Mr. Blank, I understand you have 146 bus chassis in your district, surely, you have taken advantage of this opportunity to increase

your volume and profit—the 146 bodies amounted to more money than did the 146 chassis."

Mr. Blank acknowledged that he had passed up this opportunity and would continue to do so.

I cite this difference of opinion to begin with so that my readers will more quickly grasp my point and will see where the truck distributor is making a big mistake in more ways than one, although he is not to be blamed as much as the manufacturer he represents if the following reasons are worthy of consideration:

#### **Why Did They Standardize**

There are three truck manufacturers that I have in mind who have furnished a complete standard line of body equipment with their chassis. Their catalog illustrates and describes the bodies and their adaptabilities just as thoroughly as it does the chassis on which the equipment is mounted. These three manufacturers have forged ahead under all kinds of business conditions. Today, they are three of the largest in the industry and so the question arises, "Did bodies have anything to do with it?" The answer is:

1st. Their catalog was a complete text book of valuable information, it covered the chassis thoroughly and then it just as thoroughly covered the many types of bodies that could be supplied with that chassis. When one of their salesmen went to sell a truck he sold a complete truck, not a chassis or cab or a body **but a complete truck ready to go to work without delay or uncertain cost** for the retail delivered price was printed on the pages of his catalog and there was no question about it.

2nd. The bodies shown in this catalog whether manufactured by the chassis producer or purchased from some other plant had been designed in such a way that all loads are properly distributed and the specifications were approved by the engineer of the chassis manufacturer. This decreased adjustment claims of broken parts gave the chassis a longer life, increased tire mileage and made a satisfied customer and a repeat sale from what might otherwise have been a dissatisfied customer and a knocker if he had been turned over to a custom shop or wagon shop, who's proprietor did not appreciate the necessity of such important factors.

3rd. The salesmen who can deliver the body or body and cab with the chassis even if the complete job must be ordered from the factory finds himself in a very advantageous position compared with the salesmen who knows nothing about such equipment and tells his customer to go down to the Blank Wagon Shop and Mr. Blank will build a body for him. (This sometimes means a 10 weeks wait and excess cost of from 25 to 50 percent.) Is this service or is the customer pleased to learn that he has made an investment which can make him no profit for ten weeks but depreciates and eats up interest the same as though working? There are very few men who are connected with the industry who have not seen at least one good sized fleet order lost because the competitor was in a position to make quick delivery of complete units. It matters little whether that competitor had in his file complete data on body equipment and where to obtain it, or if it was furnished direct from the manufacturer he represented.

4th. There is another advantage to the truck dealer if his manufacturer furnishes the bodies which should not be overlooked. Suppose the dealer is on the West Coast and the manufacturer in the Middle West, the freight on a car of chassis will be just the same as it would be if the bodies were mounted on the chassis due to the fact that in either case the minimum carload weight would not be exceeded, this item alone makes a considerable difference in delivered price and often times is sufficient to obtain an order where competitive bids are necessary.

#### **Get Rid of the Fogy Idea**

The most essential points of advantage have been described in the foregoing. It is the writer's opinion that if a chassis dealer wishes to make any sales records for 1925, it behooves him to get the old fogy idea "that body equipment is a nuisance" out of his system and not only educate his salesmen along the same line but furnish them with catalogs of all standard types and sizes of bodies manufactured by reputable concerns. Complete price list and delivery date should be attached to every catalog and an effort should be made to sell a cab and body on every chassis that goes out.

(Continued on page 69)



# Conducting a Truck Selling Business for Profit

## The Opinions of Some Successful Dealers on the Methods That Pay

By H. LIONEL WILLIAMS

**I**F every truck dealer had the courage of his convictions and knew enough about business principles to conduct his operations for profit only, the trade-in bogey would be non-existent. However, as we have to face facts as they are, it should be both interesting and profitable to learn the views and methods of some of the truck dealers who are meeting every kind of competition and yet managing to show a profit at the end of every twelve months.

Let them tell their own stories:

**Dealer No. 1.** (Michigan)—Fourteen years ago I started selling trucks with the conviction that I could apply to truck sales the principles learned and knowledge gained in selling other commodities. I took as a partner a man of wide experience in jewelry sales, and after an intensive study of truck construction and operation opened up our premises. From the start we had gratifying success, due largely to the fact that we had chosen to represent a manufacturer of standing, in the quality of whose products we had no difficulty in selling ourselves.

From the start we aimed at building our business on repeat orders. That is the cheapest kind of business to get, and the best kind of advertising. As a result today the majority of our clients are big fleet owners, who, incidentally, are safe risks in time-payment deals.

Arising out of this policy, a condition is established where our most numerous and largest customers are already so firmly sold on the products we handle, that there is no dickering necessary when it comes to a question of trade-in allowance. They know the value of the goods we supply and that our price is not an inflated one. Our customers buy on confidence because we have convinced them we are business men operating on business principles and out to give a hundred cents for every dollar but not a cent more. We are convinced that the buying public only wants a square deal, and the only exceptions are the smart guys looking for suckers.

### Must Have Legitimate Profit

After experiencing every kind of competition, we still maintain that if we are to stay in business we must have our legitimate profit. To that end we make every deal possible a cash transaction. Every customer gets the same treatment, and the same price. If we cut the price to one we would have to sell to another at the same price. That is why the loss on one deal is a serious matter—when once you

start giving your profits away you cannot stop.

When we have secured a new customer we endeavor to keep him by giving maximum service, but we do not give free service. One of our service features is to carry spare engines so that a client can have the use of his vehicle while we are repairing its engine. Should a buyer have a mixed fleet we are prepared to service his "foreign" trucks along with our make.

### Eliminate the Risk

So far we have not repossessed a vehicle, which we think is due to the fact that we turn down business which will not stand thorough investigation. After all, all risks are moral and the financial standing of the prospect has very little to do with his intention to pay or his knowledge of business methods.

Some truck operators, however, know too much about business. For instance there have been several cases in this district of organized swindling. This is how the dealers are caught. An operator buys a 3½-tonner at \$4,000. He pays 20 per cent down and has eighteen months to pay the balance. Then his private balance sheet looks something like this:

First payment on truck.....	\$800
First installment.....	160
Second installment.....	160
Cash received.....	\$1120
Up to the end of second month.	
Hire of truck \$35 a day for 4 months (84 days).....	\$2940

After the second payment, the purchaser stalls the third instalment until it is time to make the fourth payment. When the dealer comes to collect this the operator has vanished with \$1800 in his jeans.

Business in 1924 was good. Over 80 per cent of our sales were in the heavier class of truck. Our winter sales are always fairly good. Last November we sold 126 trucks, but it appears that 1925 is going to be a much better business year in every way.

**Dealer No. 2.** (Wisconsin) Established in 1916, we now have five salesmen and sell about 220 trucks a year. Our 1½ and 2½-tonners are the best sellers. On about 75 per cent of this business we have to take trades, but time sales only constitute 60 per cent of the total business. We are fortunate in having a good used vehicle market, so that we are never overloaded with second-hand trucks. Most of them we overhaul and repaint, often spending as much as \$350 on one vehicle, but we usually manage to cover this ex-

penditure and leave a little over. In this reconditioning we are largely guided by the fact that a broken-down truck of the make we sell is a poor advertisement.

Fifty per cent of our business is repeat orders, and we think this is not uninfluenced by the fact that we make a feature of service. We have a wrecking car which is ready for use at all times, and we carry \$40,000 worth of parts, including repaired engines for temporary replacement. After experiment we decided that a 24-hour service system was quite unnecessary.

A big selling asset is, we consider, the fact that we carry our own paper and make no brokerage charge. It is an extraordinary fact that many buyers look upon the brokerage charge as a little something for nothing in the dealer's pocket. We always get from 25 to 33 per cent down payments and balance in twelve months. For twelve months after a sale we inspect the vehicle free of charge, when invited to do so, and the users thus feel that they are relieved of some worry.

We find it helps to confine each salesman to one or two trades, so that he knows exactly the requirements in the businesses he deals with.

In this city, which has a population of about 200,000, we do not consider the location of the premises is of much moment. The advertising value of show windows would hardly be worth the necessary expenditure.

A noticeable trend in truck operation is that of fitting custom-built bodies, indicating an appreciation of the advertising value of a motor vehicle.

(To be continued)

## M. and A. M. A. Credit Service Shows Increased Activity

The 1924 activities of the credit department of the Motor and Accessory Manufacturers' Association, a national association of more than 400 parts and accessory manufacturers, showed a marked increase over the previous year. The M. and A. M. A. credit service covers jobbers, distributors, body and car and truck makers in both the domestic and foreign fields.

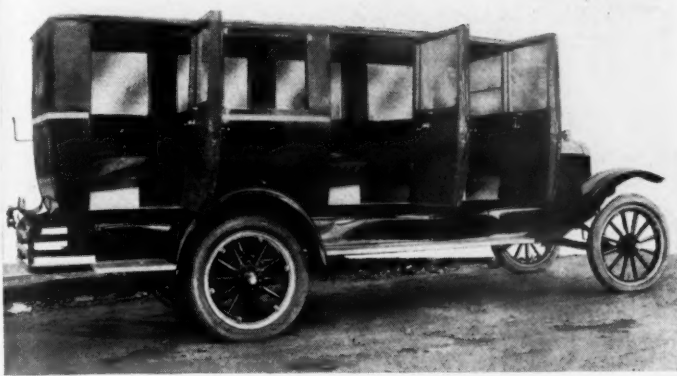
During the past year more than 310,000 monthly reports have been sent to M. and A. M. A. members, virtually all of whom co-operate in the credit work. This compares with 299,000 in 1923, which was a year of bigger business.

More than 24,000 complete special reports were issued during the past twelve months as against 14,500 for 1923. 10,500 reports followed special requests by members. The others were sent voluntarily.

A feature of the M. and A. M. A. credit service is a daily bulletin in which 2,500 items appeared in 1924. These items report latest ledger experiences of member companies. Members also receive each month a revised grading list of more than 2,200 jobbers and vehicle makers.

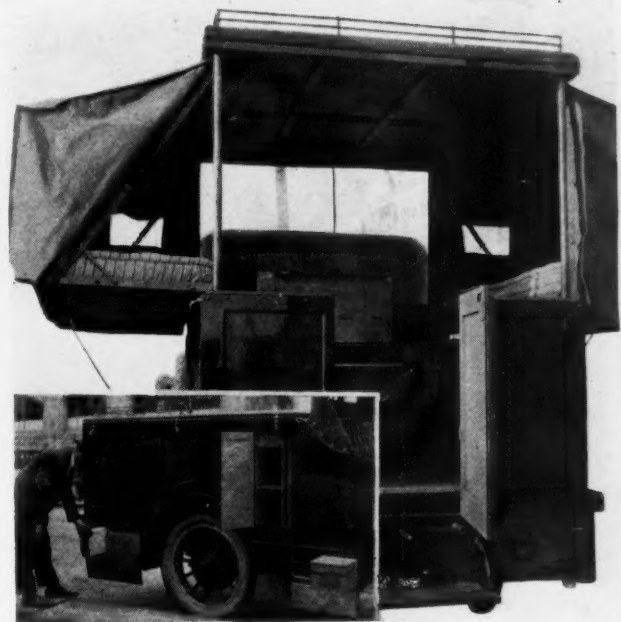
The opening of a new Detroit field office, tabulation of credit information for ready reference by the sales department, and the organization of a foreign credit service have been improvements effected by the M. and A. M. A. in 1924.





**Above: How a 12-Passenger De Luxe Sedan Bus Appears on a Ford Chassis**

The body is specially designed for Ford installation and is made by James & Graham Wagon Co., Memphis, Tenn. Quick entrance and exit is made through the side doors.



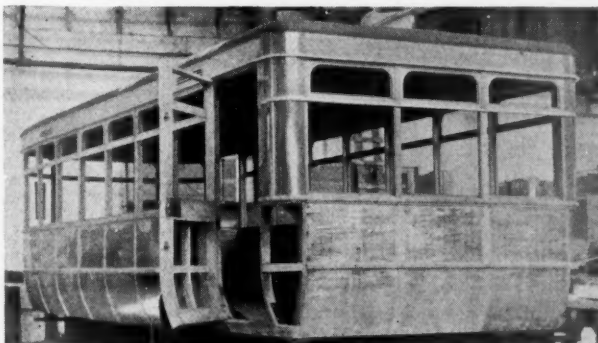
**Right: Novel Camp Car Has a Top That Can be Raised or Lowered. When Raised There is a Clearance of Six Feet and When Lowered the Car Loses All Resemblance to a Camp Car.**

The interior is fitted with two collapsible beds. Storm and mosquito curtains are provided. A kerosene stove is housed just in back of front seat. All available space is utilized, cupboards and lockers being arranged both in and out of the body. Two water tanks, for auxiliary purposes, are built in over the wheels. The refrigerator compartment is provided over the running-board. The top is raised by a cable and crank arrangement.



**Oil Company Reduces Sales and Delivery Costs by Use of Speedy Tanker**

The Indian Refining Co. by mounting de luxe tank body on a Mack Bus Chassis, is able to closer co-ordinate and effect economy in selling and delivering lubricating oil in bulk to their Metropolitan dealers. Mounted at the rear of the closed cab a 700 gal. cylindrical tank with four compartments for transporting an ample quantity of each grade of oil.



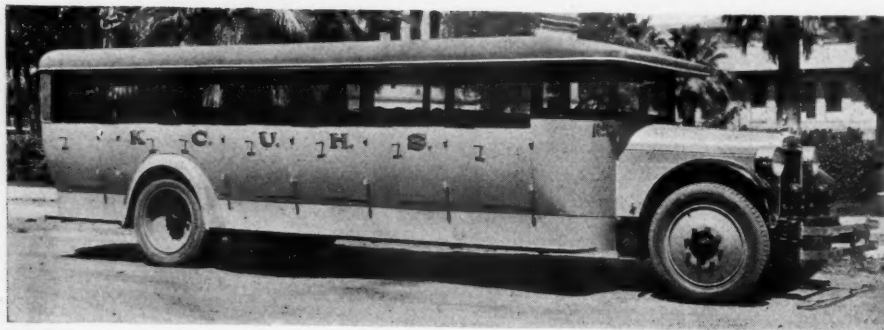
**Cast Aluminum Corners are Used in the Rear of This Bus Body**

Their use naturally enables the body to withstand heavy blows much better than the ordinary hammer metal corner type. Note that the emergency door is installed on the rear left side, permitting easy exit in event of accident.



**Special Metal Bracing in Bus Body Construction Eliminates Squeaking**

Bodies built by the California Transit Co., Oakland, Cal., are built with special iron arms, plainly shown in the illustration, at all points of the body liable to give or work. They are also employed to reinforce the roof sufficiently to carry baggage.

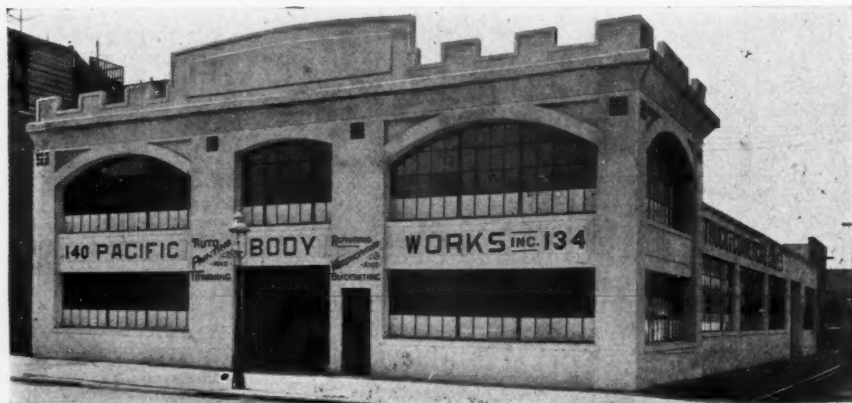
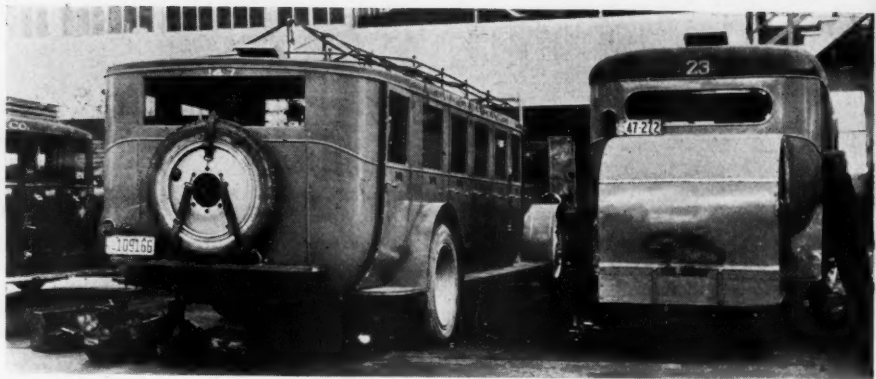


**Above: Contrasts Are Always Interesting  
Even in Motor Transportation**

One study is of eighteen years ago when bus travel was in its infancy, and the other of recent date showing the modern motor coach of today, a veritable vehicle de luxe in its design and appointments. Both vehicles are of International make.

**Right: Advantages Derived by Carrying  
Baggage on the Roof Makes That  
Method More Popular**

Many motor stages in California are now carrying baggage on the roof of the stage. As a consequence weight is more evenly distributed, the unsightly appearance of the rear is abolished, and the space formerly required by the baggage is conserved for passenger use.



**Pacific Body Works, Inc.,  
Uses Post Cards in An-  
nouncing Removal to  
Larger Quarters**

The new plant a daylight, fireproof building of artistic design was photographed and reproduced on a post-card which was addressed to all interested in the change. Just inside the main entrance a dust-proof paint shop and a wood-working department is provided. A blacksmith shop is in the rear. Offices are located on the balcony.



**First Republic Truck Ever Built Still in Operation**

The truck is owned and operated by Charles J. Holbein, of Livermore, Cal. It was originally purchased in 1913 by the Diamond Milling Co., Livermore, Cal., and driven 100,000 miles over a period of nine years. Mr. Holbein estimates that another 30,000 miles has been added to its record since it has been in his possession. By contrast, and to emphasize the strides which have been made in motor truck design and construction, one of the modern Republics a 1 1/4-ton job, is shown along side the old veteran.





#### Novel and Efficient Arrangement of Machine Shop Tools

The nails supporting the various tools are driven into the board in such a manner that tools can never be placed on any part of the board except in the exact spot designated for them. Considerable time is saved by this arrangement. The system is followed out in connection with bolts, screws, nuts, etc.



#### Operates at Half the Cost of a Horse and Wagon

Designed and built by Lee Oldfield and Chas. Rowson, of Chicago, this novel, single purpose vehicle performs the work of a horse and wagon at less than one-half the cost. It is gas driven and intended for city operation. The list price is \$750.

#### Newton Worm Drive Hoist on a Mission Scavenger Truck

The worm gear is driven by the truck engine. This hoist designed by John Newton, of Pacific Body Works, Inc., San Francisco, Cal., is featured by simplicity and quickness of operation. It can be stopped in any position.



#### Twenty-five Years Sees the Motor Truck Developed Into a Major Factor in Transportation

From a freakish looking contrivance in 1900 the motor truck has developed into an economical reality. Today the truck is an important transportation medium. The extent of the growth is best shown by truck production figures: Fifteen years ago, less than 25,000 trucks were manufactured by the industry. Over 2,350,000 trucks have been made since. Present production is approximately 375,000 a year. The illustrations show a White of yesterday as compared with one of today.



# Truck Owners Furnish Excellent Advertising Theme

## How a Washington Truck Dealer Devised a Co-ordinated Publicity Campaign That Brought Customers Into the Picture

By RUEL McDANIEL



International Headquarters in Washington, D. C.

IT is human nature for most people to like to see their names in the paper, even though there are some men who won't admit that they like it. Next to reading about one's self, about the next most interesting subject is the persons nearest the reader. An acquaintance, even though the acquaintance may be a business competitor, is always an interesting subject upon which to read.

Taking this view, the International Motor Truck Agency, Inc., Washington, D. C., formulated a very interesting advertising campaign some months ago that has been a consistent producer of good will and new business ever since. Primarily, the plan is based upon the theory outlined above.

### "Who's Who in Truckdom"

"Who's Who in Truckdom" was the general title selected for the advertisements of the series. Each Wednesday in the **Evening Star** an advertisement appeared, usually three columns wide and six to eight inches high.

Under the general heading, "Who's Who in Truckdom" appeared an illustration showing a truck recently sold by the company to some local concern, the buyer's name appearing on the truck body.

The brief text under the picture told that the company whose delivery truck was shown above had just purchased a new international; it told the capacity of the vehicle and outlined, briefly, the agency's service to purchasers and emphasized the dealer's desire to demonstrate a truck to prospective purchasers.

### More Convincing Than Words

The pictures in the advertisements told the story. They were proof that this make of trucks is actually performing service in Washington; and this proof means more than hundreds of words of description and claims. There are few things more convincing to, say, a retail coal dealer who is in the market for a new truck than to see by the advertisements in the papers that another retail coal man, whom he doubtless knows pretty well, is using the same kind of truck with satisfaction. This information means more to the prospective purchaser than anything that a salesman could say.

And the direct-mail tie-up with the newspaper copy was still more convincing, and it made the campaign doubly

productive. The timeliness with which the direct-mail material went out was a notable feature.

### The Vocational Mailing List

The company got together mailing lists of concerns and individuals in practically every line of business in Washington—every line of business in which there was a need of delivery trucks. All these names were grouped according to the classes of business the prospects were engaged in. All furniture retailers in one group, all contractors in another, and so on.

When the advertising schedule showed that a contractor's new truck was to be shown in the next piece of newspaper copy, the company got up a letter about this particular truck, aimed it at other contractors and sent it to every contractor on the mailing list. The letters were mailed on the day before the advertisement appeared, so that they would be delivered to the prospects on the morning that the advertisement appeared in the afternoon. By timing the letters in this manner, the recipients of the letters did not have to keep the advertisement mentioned in the letters in mind so long.

**WHO'S WHO IN TRUCKDOM**

**FURNITURE**

This is the ideal equipment for furniture and express delivery as proven by the Ballard Furniture Co., who have given this International motor truck a thorough test and found it to be satisfactory in every respect.  
Let us demonstrate one to you and show how you can cut down on overhead expenses and save time on deliveries.  
Come to our show room and see the wonderful display of motor trucks.  
Free Inspection for Life of the Truck—All Night Service  
SIZES 1 1/2—2 1/2—3—4 Tons  
**LET US DEMONSTRATE**  
**International Motor Truck Agency, Inc.**  
226-232 First St. N.W. Phone 1729  
Sign Plans, Lincoln 1781-W

**WHO'S WHO IN TRUCKDOM**

**ANOTHER ONE**

This is the enclosed type furniture delivery truck which has been the choice of the E. Miller Furniture Co. A very practical equipment. The photo shows a 1-ton chassis.  
**LET US DEMONSTRATE ONE TO YOU!**  
Come to our show room and see the wonderful display of motor trucks.  
Free Inspection for Life of the Truck—All Night Service  
**LET US DEMONSTRATE** SIZES 1 1/2—2 1/2—3—4 Tons  
**International Motor Truck Agency, Inc.**  
226-232 First St. N.W. Phone 1729  
Sign Plans, Lincoln 1781-W

Each Wednesday an Advertisement is Scheduled in the Evening Star, Illustrating a Truck Recently Sold to a Local Concern. The Buyer's Name Appears on the Truck Body. Brief Text and the Illustration Imparts the Story

They remembered to look in the afternoon paper for the advertisement mentioned.

The letters were carefully multigraphed, signed by Walter Miles, manager of the company, and mailed under two-cent postage. Names of recipients were not typed in at the top of the letters but a general head, applicable to all who received it, was employed.

This message to coal dealers of Washington is a good example of how the direct-mail tied up with the newspaper copy:

Mr. Coal Man,  
Washington, D. C.

Dear Sir:

Watch the Wednesday Evening Star, sports page, for our display advertisement of the wonderful little 1 to 2-ton dump coal truck. Heavy springs, powerful motor and inexpensive upkeep.

Let us demonstrate. You must see this truck to appreciate its quality.

Inclosed you will find a circular concerning our full line of trucks. Look it over, we know it will be to your advantage to look into same.

Do not forget our advertisement in Wednesday's Star.

Then followed the closing, name of company and Mr. Miles' signature.

In this particular letter, and many of them were of this type, the name of the concern whose truck was pictured in the newspaper advertisement was not mentioned. And this style of letter proved highly satisfactory.

"We found in some cases that by not mentioning the name of the company whose truck we were going to show in the paper," explained Mr. Miles, the men who received our letters took an even keener interest in the paper, for they were anxious to see whose truck we were going to feature. They were interested in knowing which of their competitors was going to get some advertising at our expense."

#### No Trying Technicalities

With all letters the company enclosed a folder supplied by the manufacturers, giving the high points on the line of trucks and picturing the leading models. This did away with having to give any technical details in the letters, and thus enabled the company to get over a message briefly.

Here is a letter to furniture retailers that brought results:

Mr. Furniture Man,  
Washington, D. C.

Dear Sir:

We wish to call your attention to another Furniture Job, this the enclosed body type, which is the equipment of Wm. E. Miller Company, one of the largest furniture companies in Washington.

The photograph will be shown on the sporting page of the Evening Star, Wednesday, January 7th, 1925. Do not fail to see it.

And here is another letter, dealing also with a furniture concern, containing more selling talk than the one just quoted:

Mr. Furniture Man,  
Washington, D. C.

Dear Sir:

We wish to call your attention to our advertisement in the Evening Star, on sporting page, showing the choice of the Ballard Furniture Company. They have found this truck to be a very satisfactory equipment.

The illustration shows our 1½-ton truck. We build a complete line from ¾ ton to 5 ton.

Let us demonstrate one of the models you might be interested in later on. We would deem it a great favor if you would allow us this privilege, or call at our show room, 228 First Street, N. W., and see the most complete line of commercial trucks in the city of Washington.

"We always try to run pictures of new trucks," explained Mr. Miles. "Sometimes we get so far ahead on sales that we are not able to use the pictures of recently delivered jobs until they have been in use for some time, but we stay up as near as possible, and try to run as near all of our customers' trucks in the advertisements as we can. Sometimes, when we sell several to one company, we take a picture of the whole fleet and run it as a group illustration."

Mr. Miles declared that it is surprising to note the interest taken in the series of advertisements by purchasers of new trucks. Invariably when a man buys a truck he wants to know if it is going to be pictured in the paper. And this interest is natural, too, for it does mean a great deal of publicity on the part of the purchaser as well as for the agency.

"The practice of running pictures of new sales in the paper directly sold a truck for us not long ago," Mr. Miles explained. "Sounds strange, but it's the fact. A prospect liked our truck, but he had his mind on another make too. He couldn't quite decide which of the two he should buy. Finally he scratched his head, squirmed around a bit, and said, 'suppose I buy your truck; will you run a picture of it in the paper?' I told him we would gladly do so and he gave his order then and there!

"Another man bought four new trucks at once. We immediately ran a picture of one of them. About a month later we needed another picture in this particular field, and not having made a recent sale, to a concern in the field, we ran a picture of another of this customer's vehicles. Soon afterwards he came to us and wanted us to run the other two. When we explained that we had already run one more picture of his equipment than we should have, he offered to pay for the advertisements necessary to use the other two pictures. That's how well many of our customers appreciate this advertising.

## Successful But Future is Jeopardized

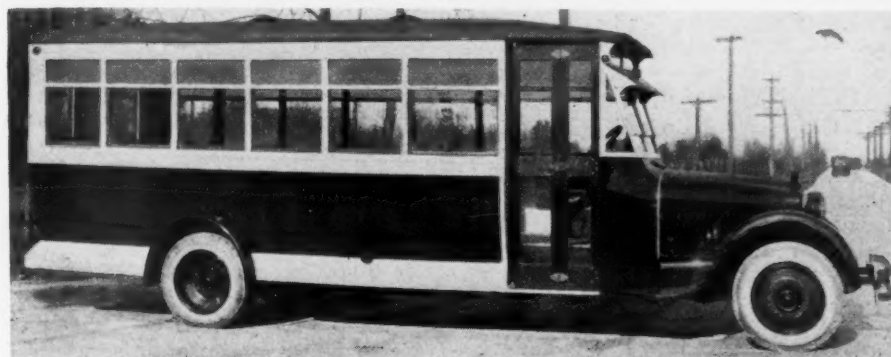
The reflex of the action of the Dump Truck Corporation of Los Angeles in suspending operations for ten days during December now is being felt, according to reports from the western city. Members of the organization accomplished their purpose in obtaining an increase in their rates but indications are that the future of the corporation was jeopardized.

Approximately 400 dump trucks suspended operations and as many of these were engaged in transporting supplies for building materials companies, the latter, through their organization, appealed to the Merchants and Manufacturers' Association. Representatives of the M. and M. accused the Dump Truck Corporation of adopting union labor tactics and staging a strike.

The Dump Truck Corporation denied their members were striking and that their methods reflected union labor tactics. They maintained they were not selling labor but a service and that they had the same privilege to organize as any other group of business men. The M. and M. of Los Angeles is primarily an anti-union labor organization and takes credit for having maintained open shop conditions in Los Angeles for many years. The dump truck operators claim that the M. and M. has influenced the building materials dealers to refuse to hire trucks from the corporation. The dealers are treating with individual truck owners and paying the stipulated rates but refuse to recognize the corporation. By this method they expect to destroy the corporation which has been functioning on a lease agreement with the owners to obtain work for them.

## Gasoline Raised in Number of States

Recent gasoline and crude oil price advances became general in practically all districts east of the Mississippi river. The advance in gasoline ranges from 1 to 3 cents a gallon, while crude was marked up from 15 to 35 cents a barrel.



Carolina 25-Passenger Pay-Enter Type of De Luxe Bus Body

This body mounted on a White 58 was designed and built for the W. S. Barstow Management Association, Inc., operating managers for North Carolina Public Service Co., Greensboro, N. C. This company is supplementing its trolley service with buses and is establishing entire fleets in other sections. This job was designed and built by the Carolina Body Co., Greensboro, N. C.



# C.C.J. SHOP IDEAS

**THESE** two pages are primarily designed to help service station repairmen in exacting economies in time, labor and money. Salesmen, however, can also profit by scanning over these practical hints. Familiarity with expeditious and money-saving methods in truck repairs and operation will enable the salesman to talk the language of the average buyer of today,

who is more conversant with the important details of truck operation and maintenance than ever before. A money-saving idea will not only pave the way for intelligent attention on the part of the prospect, but will often result in a sale. The ideas contained herein are not confined to any particular class. Attention will be given wherever merit warrants it.

## 1197—Steering Alignment

**I**N sketch No. 1 a front axle is shown with a mandrel in each of the steering knuckle bolt holes. By placing a square on the spring saddle, and by measuring at "A," as shown, the degree of camber can be found. Camber is given to a front axle to bring the wheel at the bottom as near the center of the steering knuckle bolt line as seems practical. Some steering knuckles are designed with a certain degree of camber; but most axles are made with from 2 to 3 degrees, and if in testing the axle it is found that more or less camber is necessary, the axle must be bent at point "B."

Using these same mandrels, a twist can be located in the axle. This is done by sighting down the mandrel, and if the axle is twisted, a condition similar to the one shown in sketch 2 will be noted. Do not confuse this twist with the caster effect shown in sketch 3. Some axles are twisted intentionally from  $\frac{1}{8}$  to  $\frac{1}{4}$  inch to obtain this effect. Other axles are tipped or designed at the spring saddle to obtain the correct degree of caster effect.

Steering knuckles are tested between lathe centers as shown in sketch 4; and if they are sprung badly they should be heated and straightened in a press. The spindle at both the front and rear wheel bearing points should run true.

## No. 1198—Curtain Holder

**A** SIMPLE and effective suggestion is offered to conserve the shape and protect curtains of cabs, buses, and cars while the chassis is undergoing repairs. Cut two or more pieces from a discarded inner-tube about  $\frac{1}{2}$ -in. wide. Roll up the curtain and slip the rubber bands over as shown.—F. J. Wilhelm, Cincinnati, Ohio.

## 1199—Protecting Mandrels

**C**LAMPING mandrels in a vise often bruises them. Burrs are formed that must be removed before they can be used. Copper protectors on the vise jaws will save this trouble. These can be made from copper of any thickness. They are made by clamping two sheets of copper in the vise. The copper is first bent down over the top of the jaws; then, at the ends, it is cut, and the top bent down over the end of the jaw. The end that protrudes parallel with the face of the jaws is trimmed on a desirable angle, and lapped over at right angles. Each end of the protector is bent in the same manner.

## 1200—Extending the "C" Clamp

**T**HE confined range of the averaged sized "C" clamp can be extended to accommodate any shop need by the following method: Cut the body of the clamp with a hack saw at the point indicated in the illustration. Next, bore a pair of holes to fit a  $\frac{1}{2}$ -in. bolt in each section of the clamp body. Secure two pieces of standard flat stock measuring,  $\frac{1}{2} \times 1\frac{1}{2} \times 12$  to 16 in. At one of both pieces drill a pair of holes that will register with the pair of holes in one of the clamp sections to which it is united. At the other ends of the bars drill any number of holes to fit a  $\frac{3}{8}$ -in. bolt, at regular intervals and so that they will register with each other and with the holes in the remaining section of the clamp. As can readily be observed from the illustration any length can be accommodated in the clamp by bolting the lower end of the clamp to any desired position on the two bars.—F. J. Wilhelm, Cincinnati, Ohio.

## 1201—Honing Labor Saved

**W**HILE cylinder hones do excellent work in regrounding cylinder blocks without removing the engine from the car, the average mechanic does not enjoy the labor connected with his process of grinding cylinders.

If a coil spring is hung from the rafters of the shop and the end attached to the drill used to drive the cylinder hone, as shown in the sketch all the labor of lifting the hone out of the cylinders will be eliminated, and the only labor required will be to bear down with enough pressure to keep the hone working in the proper place. The spring will do all the work of lifting.

## 1202—Tongs for Barrels

**I**N the handling of barrels in delivery work it occasionally happens that a barrel is dropped and broken. A mishap

Commercial Car Journal will pay \$1 for each new idea which it accepts, or as much above that amount as the idea is worth. Simply tell us exactly how it is done and send a rough pencil sketch showing clearly the method employed or the device used.

such as this can frequently amount to a considerable sum in damages. A simple device that will reduce this hazard and will more than pay for itself in money and time saved is the following offered by a reader. It consists of two curved arms joined together at one end by a  $\frac{7}{16}$  in. bolt. The other ends are fashioned into flat hooks for fastening under the skirt of the barrel to be moved. The tongs are supported by a chain from the middle. The weight of the barrel, obviously, tends to increase the grip of the hooks under the skirt. Two notches are provided on the under side of each arm a short distance from the center. These notches are designed to receive the supporting chain if it is desired to tip the barrel for draining purposes.—W. G. Lambert, Langford, S. D.

## 1203—Broken Speedometer Shaft

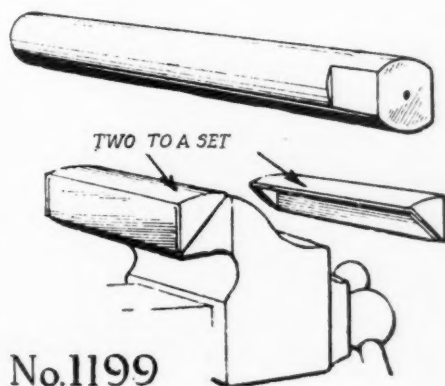
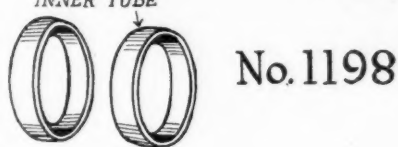
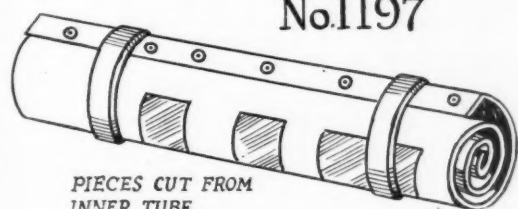
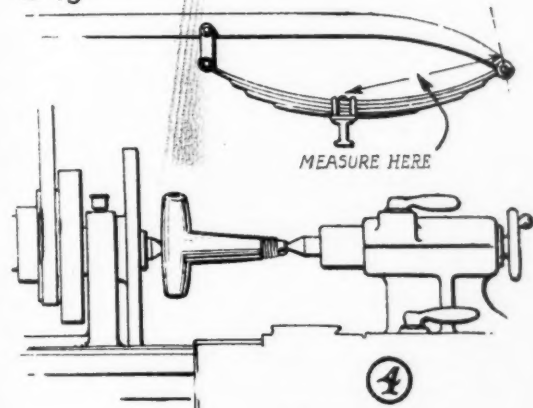
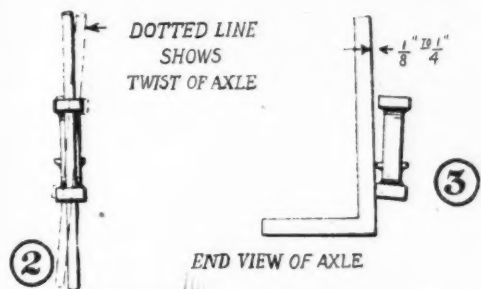
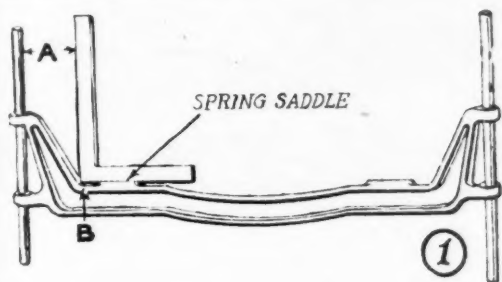
**G**ATHER the broken part of the shaft together and secure in place by tightly wrapping several plies of tire tape around the shaft. Reinforce the tape by any number of clamps that can be readily clamped in place as illustrated.

The clamps are made from sheet iron or brass, 20 gage. The length is slightly longer than the diameter of the shaft plus the added thickness of the tape. The width is  $\frac{1}{2}$  inch. The construction otherwise is apparent and explained by the illustration.—F. J. Wilhelm Cincinnati, O.

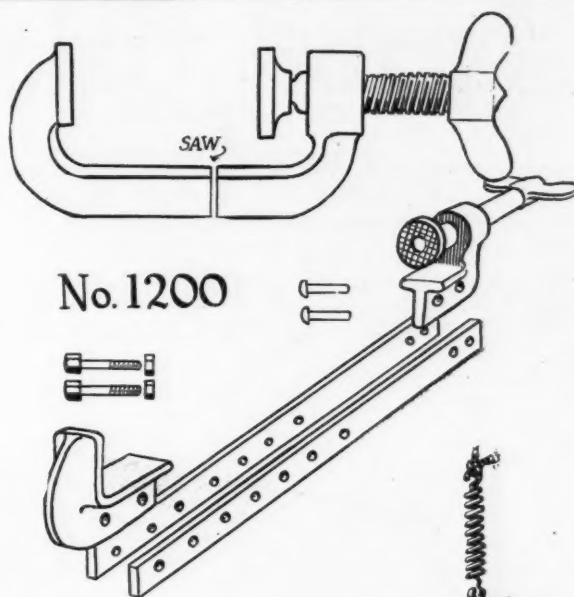
## 1204—Extension for Starters

**I**T occasionally occurs that the regular starting button of a delivery vehicle is beneath the level of the floor boards. This generally results from sills on some bodies being higher than standard, consequently the floor boards are higher than the starter button. Most of the manufacturers provide extensions to meet this emergency, but the device provided is apt to be broken by the driver's feet. At any rate wherever an extension is required the following method may readily be employed to meet the need: The assembly of the parts is simple and is accomplished as depicted in the illustration by means of a clasp, which fastens to the floor board. The device consists of an old Schrader valve and any cheap clasp that can be obtained in a hardware or any 5 and 10 cent store.—W. A. Krause, Auburn, N. Y.

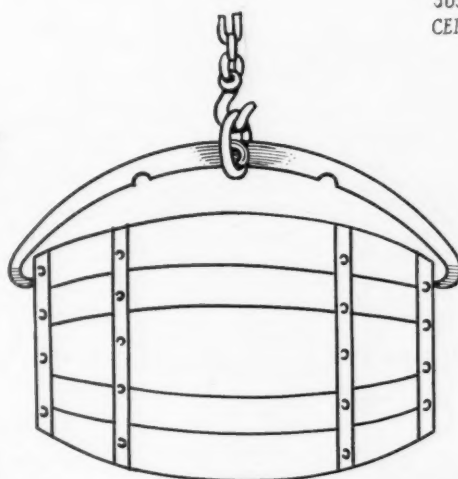




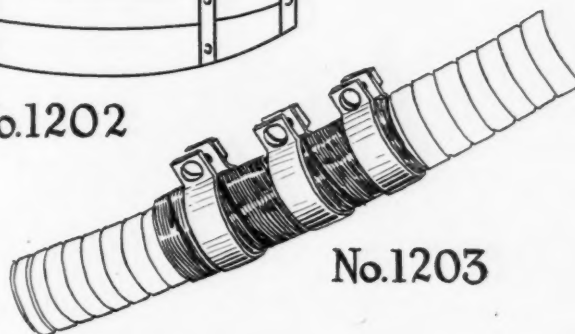
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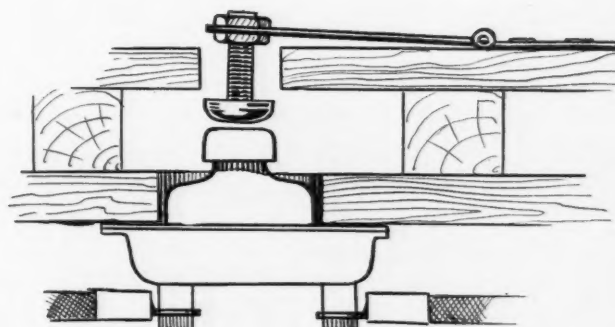
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No.1202



No.1203



No.1204

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# EDITORIALS



## Electric Trucks Gaining

A RECENT field survey made by the Society of Electric Development to ascertain just what the sales potentialities are for the electric truck, indicates that increased sales will be commensurate with the "extension of charging and service facilities."

The electric truck industry has shown a 25 per cent gain in sales during 1924, which indicates that truck owners are becoming more thoroughly sold on the value of purchasing transportation that actually meets their requirements.

But imagine how the electric truck sales curve would rise if all the manufacturers of electric charging apparatus, batteries, and accessories would get behind the electric truck business in real earnestness and do their share in promoting and advertising the advantages of electric trucks for short haul frequent stop work.

Whole-hearted co-operation by the various interests involved would do much to bring about a quicker realization of the advantages of the electric truck and eliminate much of the misunderstanding and mystery which still surrounds its care and operation. With central stations co-operating on making electric current available at reasonable rates, a few hundred per cent yearly increase in electric truck sales could easily be realized.

## Speeding Up the Traffic

TRANSPORTATION men are closely watching Los Angeles, the first city to make the fateful experiment of prohibiting the use of its business thoroughfares to horse-drawn vehicles. The problem of the city engineer today is not alone to provide more paved streets, but to obtain the utmost efficiency from those he already has. While slow traffic is permitted to obstruct the fast, such thoroughfares will never be 100 per cent efficient. The only objection to such prohibitive steps is the hardship which is bound to be inflicted on the horse owner. No mention, however, is made of the great losses accruing to everyone else through the road obstruction the slow moving vehicle occasions. By postdating the law so as to give the horse owner time to make different arrangements, and commencing by making it effective only during certain rush hours, much of the hardship involved is removed.

Horses are unfortunately not the only factors contributing to the inefficiency of the city streets. Congestion is another potent cause. It is impossible to widen streets indefinitely, yet the number of vehicles using them increases daily. Professor A. H. Blanchard recently proposed a method of coping with this problem. He suggests keeping all automobiles out of the business districts, and running motor buses through all the principal thoroughfares. Shoppers and others making calls in the restricted area would then leave their machines in the outlying districts and use the buses for central district calls.

## The Motor Bus Market

RECENT figures issued by the National Automobile Chamber of Commerce indicate that during the year 1924, a total of 52,925 motor buses were in service. The approximate distribution of these buses is as follows:

Common carrier independents .....	31,100
Electric railways .....	3,000
Hotels .....	1,000
Schools .....	15,000
Sightseeing, tourist and contract .....	1,500
Industrial use, including real estate, department store, apartment house, garage and factory service .....	1,075
Railroad terminal companies .....	250
Total .....	52,925

According to Edward F. Loomis, Secretary of the National Motor Truck Committee, 12,500 motor buses and vehicles for bus use were placed in service last year or approximately 25 per cent of the total in use.

A careful study of the above figures substantiates the convictions which this publication has repeatedly voiced, namely, that the largest proportion of the sales made by the motor bus industry has been made through dealers to the operators of independently operated bus routes, schools, hotels and so forth.

Although electric railway companies have come into the market more earnestly during the past year the proportion of independently operated buses as against buses operated by the electric railways is about 16 to 1.

The manufacturer of motor buses would do well therefore to give the bus market careful consideration and decide definitely which group will be most profitable for him.

# News of the Trade

## A. E. S. A. Holds Fruitful Service Meetings

**Satisfied Service Customers, Theme of Many Talks. Side Lines for Service Stations Also Discussed**

Talks by various speakers at the Chicago convention of the Automotive Electric Service Association brought out many fundamentals in the building of a successful electrical service station business. Various manufacturers also presented features in connection with the merchandising of their products, and the possibilities of electrical service stations handling various side lines.

Selling the customer on the idea that he was really getting something of value in a repair job was particularly stressed by F. S. Armstrong, sales manager of the Vesta Battery Co.

Kettering favored the assemblage with a very interesting talk in which the necessity of studying the fundamentals of any job was forcefully presented.

The degree to which car dealers are tending to take on electrical work and become to some extent competitors of the electrical station was touched on lightly by one or two speakers, but others presented the opportunity of more than making up for such loss of business by means of various side lines.

Another line to increase sales was referred to by J. H. Shoemaker, of the Perfection Heater and Mfg. Co., who showed that the electrical service station men, capable of working a hacksaw and wrench could install heaters when the other work dropped off. He also mentioned carburetor service and sales as a natural accompaniment to ignition work, from the fact that trouble in the engine might be

either due to ignition or carburetion or both.

Another possibility of profit to the electrical service station was brought out by representatives of lamp and bulb concerns. The fact that legislation in many states required approved lighting devices, and that in some it required periodic adjustment was pointed out as indicating the future possibilities of this class of work.

David Beecroft of The Class Journal Co. talked on the subject of putting "Pep" into service and of the fundamental purpose of serving honestly and well which determine the ability of a business to go forward to a successful period of usefulness to the community.

New officers of the association elected were as follows: President, R. R. Thomas, Electric Equipment Co., Los Angeles, Cal.; Vice-President, H. F. Bush, Auto Equipment Service Co., Philadelphia, Pa.; Secretary, Adolph Wagner, H. T. Electric Co., Indianapolis, Ind.; Treasurer, F. W. Duffeck, Electric Power Maintenance Co., Toledo, Ohio.

## Engineers Forecast Big Paving Year

Telegraphic forecasts to the Asphalt Association from thirty-seven state highway commissioners and forty city engineers of cities of 100,000 population or over indicate that the year 1925 will be the greatest year for the paving of streets and highways in the entire history of the good roads and good streets movement. From a study of the replies J. E. Pennybacker, General Manager of the Association, estimates the 1925 paving at fully 20 per cent over 1924 which latter year was itself a record breaker.

## Dealer Principal in Bus Operators' Association

**A Texas Dealer Organizes Bus Operators of His State to Combat Hostile Municipal Legislation**

Motor bus operators, facing hostile municipal legislation at many Texas points, have organized for their own protection and will seek State regulatory laws.

The total membership of the association will reach at least 2,000. W. H. Beck, of Fort Worth, automobile dealer and heavily interested in bus lines, was the prime mover in the organization.

H. A. Pate, of Fort Worth, is president, Frank Ford, of San Antonio, vice-president, and James Anderson, of San Antonio, secretary.

A bill regulating and stabilizing the operation of the motor stages will be offered to the present legislature and an effort will be made to secure the repeal of the many conflicting municipal ordinances. The operators state that they do not oppose regulation, but welcome it when it is fair.

Operators want the State to make the motor buses common carriers and to issue permits for the operation of the various lines, just as is done with the railroads and pipe lines.

## Ball Bearing History

A folder entitled "Pioneering ball bearings in America" has recently been issued by the Standard Steel & Bearings, Incorporated, Plainville, Conn. This pamphlet relates the early history of ball bearings in this country, with special reference to the part played in it by the "SRB" organization.

# COMING EVENTS

## CONVENTIONS

**Texas Automotive Dealers Assn.**—Annual convention to be held in March, 1925, at Austin, Texas. W. A. Williams, Mgr., San Antonio.

**Automotive Equipment Association**—Summer Convention to be held June 22-27, 1925, at the Broadmoor Hotel, Colorado Springs, Colo.

## SHOWS

**Albany, N. Y., Feb. 21 to 23, 1925**—15th annual show to be held in the 10th Infantry Armory (42,000 sq. ft.), under the direction of the Albany Automobile Dealers Assn., Inc. Passenger cars, trucks and accessories. J. B. Wood, Treas., care of Chamber of Commerce.

**Ann Arbor, Mich., March 11 to 14, 1925**—3rd annual show to be held in the Yost Field House (about 50,000 sq. ft.), under the direction of Ann Arbor Auto Dealers Assn. Passenger cars, trucks and accessories. R. H. Alber, Mgr., 206 W. Huron St.

**Boston, Mass., March 7 to 14, 1925**—23d annual show to be given under the auspices of the Boston Automobile Dealers Assn., Inc., at the Mechanics Bldg. (125,000 sq. ft.). Passenger cars, trucks, tractors and automotive equipment. Chester I. Campbell, Mgr., 329 Park Sq. Bldg.

**Great Falls, Montana, March 3 to 7, 1925**—10th annual show to be held in the City Market Bldg. (11,250 sq. ft.), under the direction of the Montana Auto Distributors Assn. Passenger cars, trucks, accessories and radio. A. J. Breitenstein, c/o Rainbow Hotel.

**Indianapolis, Ind., March 2 to 7, 1925**—14th annual show to be held in the Automobile Building (84,000 sq. ft.), under the direction of the Indianapolis Auto Trade Association. Passenger cars, trucks, accessories, tops and bodies. John Orman, manager, 338 N. Delaware St.

**Omaha, Neb., February 16 to 21, 1925**—20th annual automobile show to be held at the Auditorium. Passenger cars, trucks and automotive equipment. A. B. Waugh, Mgr.

**Portland, Maine, Feb. 23 to 28, 1925**—10th annual show to be held in the Portland Exposition Bldg. (60,000 sq. ft.), under the direction of the Portland Automobile Dealers Association. Passenger cars, trucks, tractors, accessories, adding machines, office equipment, oils and grease. Howard B. Chandler, Mgr., 3 Park Ave.

**St. Louis, Mo., February 28 to March 7, 1925**—18th annual show to be held in 18th St. Garage. Passenger cars, trucks, accessories, aeroplanes and boats. Robert E. Lee, 3124 Locust St.

**San Bernardino, Cal., Feb. 19 to Mar. 1, 1925**—The Fifteenth National Orange Show will be held in the National Orange Show Bldg. (45,000 sq. ft.). The show will include passenger cars, trucks, tractors, and accessories. R. H. Mack, show manager, with headquarters, 215 Chamber of Commerce Bldg.

**San Francisco, Cal., February 21-28, 1925**—Motor Car Dealers Assn. Ninth annual passenger car, truck and tractor show, Exposition Auditorium, San Francisco, Cal. G. A. Wahlgren, manager.

## S. A. E. MEETINGS

**February**—Indiana Section, Body Finishers. **February 16**—Cleveland Section, Electrical Instruments and Measuring of Chassis Tests by Means of Them. J. H. Hunt, General Motors Research Corp., Old Colony Club, Cleveland.

**March**—Indiana Section, Developments in Transmissions.

**March 16**—Cleveland Section, Road and Riding Ability. Harry Horning, Waukesha Motor Co., Old Colony Club, Hotel Cleveland.

**April 9**—Indiana Section. Talk by F. E. Hunt, head of electrical division, General Motors Research Club.

**June 16-19, 1925**—Summer Meeting, White Sulphur Springs, Greenbrier Hotel.



## A. A. A. Enters Bus and Truck Field

### New Commercial Vehicle Department to Link Up All Highway Users in One National Organization

The announcement today by the American Automobile Association of the establishment of a commercial truck and commercial bus division as a part of a program of expansion and increased service is considered most significant in that it contemplates bringing under one head all the owner automotive forces of the country.

This new division is to be known as the Commercial Vehicle Department. It will consist of two entirely separate divisions, a truck division and a bus division, which will be an integral part of the national body.

This important move was recently authorized by the Board of Directors of the American Automobile Association. With the formation of these divisions, the appointment of Charles P. Clark, who has an extensive acquaintance with every phase of the automobile industry, as manager of the new department was announced.

The significance of this new developments and its influence upon national and state legislation and upon all matters connected with motor vehicle operation is seen when it is considered that at the present time there are over seventeen million motor vehicles in this country and that with the completion of the contemplated plans the automotive owners of the country will be in a position to present through the passenger, bus and truck divisions of the American Automobile Association a united front on behalf of motor vehicles of every description.

The plans for the new department do not contemplate any interference with the integrity of existing state or local truck and bus organizations. Such clubs and organizations in joining their respective divisions of the Commercial Vehicle Department of the A. A. A. will retain their names and their individuality in every way. The jurisdictions and activities of existing state and local truck and bus organizations are not superseded by the new program. It is intended largely to correlate activities and to handle interstate and national aspects of bus and truck problems. Two separate Bus and Truck Divisions were set up because national officers of the A. A. A. recognized that the interests of the two groups were not in every instance identical.

Among the constructive steps on the program of the Commercial Vehicle Department of the A. A. A. are the following:

1. Traffic survey to determine the best methods of routing commercial travel away from congested areas.
2. Research in operating costs under all conditions and in all parts of the country.
3. Legislative activity which will prevent undue burdens and improper restrictive legislation being placed upon motor vehicles. Complete information service as to the development of

municipal, county, state and national legislative movements having to do with motor vehicle taxation and operation.

4. Studies of the possibilities of terminal stations all over the country for the handling of freight and passengers.
5. A campaign for courtesy on the highways and the development a helpful interest between the drivers of commercial vehicles and drivers of passenger cars.
6. Organization of a field service to aid local truck and bus organizations in research and in the extension of their membership by securing the adherence of large fleets of trucks.
7. Co-operation with state authorities in programs for snow removal.
8. Educational service where the science of motor transportation will be studied and developed on the basis of practical experience.

## M. and A. M. A. Committees for 1925

E. P. Chalfant, president of the M. and A. M. A., a national association of more than 400 parts and accessory manufacturers, has made the following appointments of committees for 1925:

### Executive

E. P. Chalfant, Chairman, Gill Mfg. Co.  
G. Brewer Griffin, Westinghouse Electric & Mfg. Co.  
C. E. Thompson, Steel Products Co.  
W. O. Rutherford, B. F. Goodrich Co.  
A. H. D. Altree, American Bosch Mag. Corp.

### Finance and Expansion

E. P. Chalfant, Chairman, Gill Mfg. Co.  
L. M. Wainwright, Diamond Chain & Mfg. Co.  
G. Brewer Griffin, Westinghouse Electric & Mfg. Co.  
H. W. Chapin, Brown-Lipe-Chapin Co.  
C. H. L. Flintermann, Michigan Steel Casting Co.  
J. M. McComb, Crucible Steel Co. of America

### Show and Allotment Committee

C. E. Thompson, Chairman, Steel Products Co.  
Eugene B. Clark, Clark Equipment Co.  
H. L. Horning, Waukesha Motor Co.

### Membership Committee

A. H. D. Altree, Chairman, American Bosch Magneto Corp.  
M. B. Ericson, Biflex Products Co.  
C. H. L. Flintermann, Michigan Steel Casting Co.  
Eugene B. Clark, Clark Equipment Co.

### Banquet Committee

Eugene B. Clark, Chairman, Clark Equipment Co.  
M. B. Ericson, Biflex Products Co.  
C. H. L. Flintermann, Michigan Steel Casting Co.

### Association Relations

H. L. Horning, Chairman, Waukesha Motor Co.  
G. Brewer Griffin, Westinghouse Electric & Mfg. Co.  
M. L. Hemmway, Motor & Accessory Manufacturers' Association.

## Silent Hoist Catalog

The Silent Hoist Co., New York City, recently issued a new and revised price list No. 25 which covers the complete line of Silent Hoist Motor Truck Power Winches and Derricks. Price List, discount applying to same for a complete list of descriptive bulletins, will be furnished to those interested upon request.

## Domestic Rubber Would Avert Shortage

### Curtailement of Crude Rubber Supplies From Usual Sources Would Wreck Havoc on Country

South Texas, with the possible aid of Northern Mexico, could easily save the crude rubber situation for the United States in the event of war. This conclusion is drawn by officials of the General Tire & Rubber Company, Akron, Ohio, after a survey of rubber producing conditions throughout the world. The same officials contend that in peace time it will never be possible to produce crude rubber under the Stars and Stripes at a price that will come anywhere near competing with foreign-grown and owned rubber. Climatic and labor conditions are against us.

"Most of the world's rubber now comes from Sumatra, Java, Ceylon and other places along the equator in the same eastern region of the earth," says Wm. O'Neil, President of General. "It is of the highest grade known and is largely controlled by the British and the Dutch.

"The possibility of a crude rubber shortage by 1930 owing to the world's increasing demand has stirred unusual interest everywhere, for the world uses rubber for so many purposes now, and transportation is so largely dependent upon it, that any curtailing of the supply would work a real hardship.

"If war were to come, the foreign supply would be shut off entirely except for such shipping as our busy navy might be able to protect.

"We can and do produce right here in America a rubber that can be used in war emergencies, with the supply of para curtailed or shut off. It would not be cheap rubber, though of a lower quality than the para that is imported. It would probably cost three times the present prices, but America can have her own rubber in war or peace if she so desires.

"Guayule, pronounced wy-u-le, is the name of the small tree or shrub on which we could place our dependence. Guayule is peculiar to the arid regions of Southern Texas and Northern Mexico. Over twenty years ago the export of guayule from Mexico amounted to 1,000,000 pounds a month. Since then Texas has become interested to a certain extent. The industry should be encouraged, so that the rubber supply of the United States can never be cut off.

"No navy would be required to guard the bringing of guayule from Texas or even Mexico to the Akron factories where the larger part of the world's crude rubber supply is used. It could be made our staple rubber over any period during which the foreign supply might be stopped. It would cost more, of course, but nevertheless we would have real rubber during an emergency.

C. E. Wilson was appointed general manager of the Remy Electric division from the position of assistant general manager of that division.

## What Tilt of Diamond T Sees in 1925

**Future is Favorable. Business Will Not Boom But Will Continue to be Steady and Sane**

C. A. Tilt, President of the Diamond T Motor Car Co., makes a conservative forecast about 1925 truck business.

"There will be a great many trucks bought by operators in 1925," says Mr. Tilt. "Every indication is favorable. General business has been steadily climbing upward.

"We do not feel that it will be a boom year. There are no prospects of such buying by operators as there was in 1919. It will be steady and sane.

"Many trucks will be bought but business won't come of its own accord. The manufacturer must go out after it with intensive 'profit-for-the-user' methods. More than ever before he must sell Low Cost Transportation rather than just 'trucks.'

"There are still a few high-powered salesmen in the truck industry today. They are selling trucks—they are not selling the service which the truck renders and the cost of that service. I am glad to say, however, that these are in the minority and a few more years will see them entirely eliminated. The truck business is in that stage where operators realize that hauling is nothing more than a conservative business in itself where profits and losses are ever present.

"There are no clouds on the horizon for the coming year. There is a bare possibility that some buyers may go a little too fast. Their enthusiasm may run away with their more conservative judgment.

"Our own business is exceptionally good. There have been more inquiries from dealers and branches all over the country than ever before. They are the type of inquiries which show plainly that truck purchases will be made."

Mr. Tilt, a pioneer in the automotive industry, has been actively at the head of his organization since its inception twenty-two years ago. A tribute to his genius is the fact that his company has never been reorganized or re-financed throughout its entire existence.

## Hayes of Republic Heads Motor Truck Industries, Inc.

C. W. Hayes, president of Republic Motor Truck Co., Inc., was elected president of Motor Truck Industries, Inc., at the last meeting held this week in Lima, Ohio. The other officers are C. J. Helm, Acme Motor Truck Co., first vice-president, and B. A. Gramm, Gramm & Kincaid Motors, Inc., secretary and treasurer.

In Lima the members of the association were guests of Garford Motor Truck Co. and Gramm & Kincaid Motors, Inc. Luncheon was served at the Argonne Hotel. Following the meeting the association visited the Garford plant and several body building plants in the city where they studied design and manufacturing methods.

The February meeting will be held at the Hotel Statler, Buffalo, where the association will be the guest of Stewart Motor Corp. and Atterbury Motor Car Co. The date of the meeting is February 18.

## Atterbury Includes Complete Equipment

In the January issue of the Commercial Car Journal the price of the 1½ to 2-ton Atterbury Highway Express was misprinted as \$2500 instead of \$2550.

This price covers full and complete equipment including small diameter balloon type tires, steel wheels, enclosed cab with doors and windshield, electric lights, electric horn and Alemite lubrication. Solid tires and artillery wheels are optional equipment on the Atterbury Highway Express at \$2450.

Atterbury's sales policy of quoting all models with complete equipment ready for bodies applies to all their other sizes which include 2½-3, 3½-5 and 5-7-ton models.

Atterbury is one of the growing list of truck manufacturers who are quoting prices on complete chassis in contrast to the practice of making an extra charge for such obvious essentials as cab, windshield, lights, etc.

## 1924 PERCENTAGE OF TRUCK REGISTRATIONS HIGHER THAN PASSENGER CAR

An increase of 2,750,000 in passenger cars, and approximately 550,000 in trucks, during the course of the year 1924 reveals the interesting fact that the latter registered a more imposing rate of registration increase than did the former, the figures being 23 per cent for trucks and 17 per cent for cars. This represents a tendency which may be even more pronounced during the present year. It substantiates the oft-repeated statement that automotive vehicles are coming more and more to fill the world's need for commercial transportation.

## Fuller Predicts Glowing Future

"Despite statements that the automotive industry had reached the point of saturation there is still greater development to come," Governor Alvan T. Fuller, of Massachusetts, the Packard distributor, told the members of the Lions Club here tonight at his first public address since he became governor, on the occasion of the annual automobile show in the State Armory. "I have a son that I am hopeful will some day enter the business, and I advise you automobile men to encourage your own sons to study the catalogs, and prepare to enter the business for it will be one of the most progressive industries 25 years from now."

## Yellow Cab to Distribute Through Dealers

**Definite Sum to be Paid for Each Vehicle Sold, Instead of on the Usual Percentage Basis**

Details of the plan by which the Yellow Cab Manufacturing Co. will distribute its line of trucks through retail automobile dealers have just been announced.

Under this plan dealers who are authorized by contract to sell Yellow Cab trucks will be paid a definite sum for each vehicle sold instead of being remunerated on the usual percentage basis. The amount paid for each sale will vary, depending on the size of vehicle and whether or not it is sold as a chassis only or as a complete vehicle. Payment to the dealer for sales made is to be made at the first of each month.

A step toward the elimination of the used vehicle problem is undertaken through a policy of encouraging truck buyers to use their vehicles until they are worn out so that they have no trade-in value except as junk.

With each sale a purchaser's service certificate is given which sets forth specifically the free service and equipment that goes with the new vehicle. The dealer is required to check off on this certificate the performance of each item of service and the delivery of the various items of equipment. For this the dealer will be paid by the manufacturer when he has sent in the purchaser's satisfaction coupon which is a part of the certificate, properly signed by the purchaser.

## Internal Revenue Suffers Big Drop

Internal revenue collections from the automotive industry for the six months period from July 1 to December 31, 1924, amounted to \$60,361,855.67 or \$18,812,954.39 less than the same period in 1923 when the total was \$79,174,810.06, it has just been announced at Washington. The total internal revenue collections for the July 1 to December 31, 1924, period was \$1,231,663,815.59 compared with \$1,339,797,452.43 for the same period in 1923, a decrease of \$108,133,636.84.

## White Reduces Prices in Light Capacities

Price reductions ranging from \$250 to \$300 have been announced in light duty models of White trucks. The new prices are effective as of February 1, according to a statement made by Walter C. White, President of the White Motor Company.

The reductions affect four of the ten White models, including both three-quarter ton and two-ton models. There is no change in heavy duty trucks or bus chassis prices.

The Joseph Dixon Crucible Co., Jersey City, announce the removal of their Boston Office from 49 Federal Street to 80 Federal Street—the new Chamber of Commerce Building.



## Motor Bus Rules Issued by New Jersey Commission

### S. A. E. Specifications Form Pattern Upon Which the Rules Were Based

The Public Utilities Commission of New Jersey recently issued a pamphlet in which are set forth specifications applicable to motor buses within the jurisdiction of that body. The new regulations with but one exception have been in effect since January 6. The rules will be applied to all buses placed in operation whether as substitutes for existing buses or otherwise. The exception relates to the emergency door provision covered by the board's previous order issued December 18, which regulation must be made effective within 90 days.

This latest draft of specifications, made after considerable study, conforms in many respects to those formulated by the Motor Coach Committee of the Society of Automotive Engineers.

As finally drafted and promulgated by the commission, the specifications are as follows:

1. **Body Specifications.**—That a maximum length of body of 24 ft. and a minimum of 16 ft. in length over all be adopted. That a maximum width of 8 ft. and a minimum of 7 ft. outside measurements, and a maximum inside clearance of 6 ft. 6 in. and a minimum inside clearance of 6 ft. 4 in. be adopted.

The length of the body may be subject to reduction by municipal authorities where in their judgment operating conditions require modification.

2. **Window Guards.**—That suitable protection shall be provided to prevent seated passengers from inadvertently extending their arms or heads through open windows.

3. **Guard Rail.**—That each bus be equipped with a suitable guard rail to prevent passengers from obstructing the view of the driver.

4. **Partition Behind Driver.**—That a partition be constructed of wood and glass and located behind each driver's seat and so constructed as to permit proper ventilation at the top.

5. **Width of Door.**—That there shall be a minimum clearance of at least 24 in. on the entrance and exit doors of a bus.

6. **Emergency Door.**—That all motor buses shall be provided with an emergency door located in the center rear. The door shall have a minimum clearance of 18 in. and extend from the floor to the upper belt panel.

(a) All emergency doors shall be conspicuously marked "EMERGENCY DOOR."

(b) Provision shall be made whereby emergency doors may be readily opened by passengers in case of emergency.

(c) The rear of the bus shall be constructed so that no permanent obstruction will interfere with the passage of passengers through the emergency door.

(d) The rear frame of the bus shall be so designed and constructed as to minimize as far as possible rendering the emergency door inoperative in case of accident.

7. **Panel.**—That the construction of the front end of motor bus bodies shall be such as to afford the driver an unobstructed vision to the right and left. A small opening must be placed on the left-hand side of driver to provide for signalling purposes.

8. **Handles.**—That rails or grab handles must be located inside the vestibule of the bus and firmly secured by some means other than wood or lag screws.

9. **Grab Handles for Standees.**—That all buses be equipped with hand rails suspended from the ceiling with sanitary fireproof straps attached, except where handles on cross seats are used.

10. **Ventilators.**—That buses be equipped with ventilators of a suitable type to assure proper ventilation.

11. **Heating System.**—That a suitable heating system be installed.

12. **Gasoline Tanks.**—That no bus shall be operated with the gasoline tank located inside the body of the bus; the tank must be separated from the body by fireproof material and the floor directly over the tank should also be protected by fireproof material.

13. **Mirrors.**—That every bus must be provided with an inside and outside mirror.

14. **Footboards.**—That the front footboards be constructed of metal, or if of wood, protected by fireproofing material.

15. **Fire Extinguisher.**—That each bus be equipped with a fire extinguisher, to be kept in proper condition and exposed to view, the same to be not less than one quart capacity and to bear inspection label of Fire Underwriters' Laboratories.

16. **Inside Lights.**—The interior lighting of buses shall be at least 5 rated candle power per seat passenger capacity, lamps to be so located as to provide an even distribution of lighting, and all buses shall be equipped with a step light. Lighting installation, including generator, shall be so designed that the lamps shall always burn at the normal brilliancy.

17. **Switch.**—That all buses shall be equipped with a lighting control switch of ample capacity.

18. **Stop Signal System.**—That a satisfactory stop signal system shall be installed.

19. **Stop Lights.**—That all buses shall be equipped with a stop light.

20. **Route Signs.**—Provision shall be made for a route sign so located that it may be read day or night from at least 100 ft. ahead of the vehicle, and must not interfere with the driver's vision or produce an annoying glare.

21. **Overhang of Bus Body.**—That the maximum overhang of the motor bus body shall be in proportion of 7/24 of the total length of the vehicle.

22. **Chassis Frame.**—That the chassis frame be not less than 1/4-in. stock and all steel where 6-in. channel is used and not less than 3/16 in. when 8-in. channel is used, measured amidship.

23. **Height of Chassis Frame.**—That the maximum height of motorbus frames from the ground to the top of the chassis frame shall be 35 in. when measured without payload.

24. **Distance That Each Body Should Extend Beyond the Chassis.**—That the body shall extend at least the full length of the chassis frame and in no case more than 10 in. beyond the end of the frame.

25. **Bumper.**—That the rear bumper shall extend at least 4 in. beyond the body limits and be attached to the chassis.

26. **Brakes.**—That all motor buses shall be equipped with not less than two sets of brakes, one operated by a hand lever and the other by a foot pedal. Each set of brakes shall be capable of holding the vehicle when fully loaded and on a 15 per cent grade.

27. **Tires.**—That no bus shall be operated with solid rubber tires. This is not intended to exclude the use of cushion tires.

28. **Wheel Housing.**—That wheel housing be built for standard equipment, reinforced with at least 12 gauge sheet metal or its equivalent in tensile strength. The construction of the mud guard shall be such that no undue accumulation of dirt or foreign matter can be deposited on the body.

29. **Exhaust.**—That the exhaust pipe shall be extended to the rear end of the bus.

## 1,100 Miles by Bus

Through an alliance between the United Stages and the Borderland Transit it now is possible to travel by motor bus from El Paso, Texas, to Los Angeles. This is a distance of approximately 1,100 miles and traverses the states of New Mexico, Arizona and California and a part of Texas.

The Borderland Transit Co. in January placed in service six Mack sedan buses of the very latest type. The United Stages use Pierce-Arrow cars.

The Borderland Transit carries passengers from El Paso as far west as Blythe, Cal., and Yuma, Ariz. At these points transfers are made to the system of the United Stages which continue the run to Los Angeles via Riverside or San Diego. The schedule from El Paso to Los Angeles requires four days but the inauguration of day and night through service is contemplated. The stages travel over paved highways practically the entire distance.

## To Make Other States Help Pay Maintenance Cost

### Under the Proposed Law Motorists From Other States Will Contribute

Gasoline tax legislation in New York State again loomed into view when Assemblyman Lord, of Chenango county, the first director of the Motor Vehicle Bureau of the State Tax Commission, presented a measure carrying a tax of one cent a gallon. In the early days of the session Assemblyman Milan E. Goodrich introduced a bill proposing a tax of two cents a gallon.

Under the proposed law motorists from other States who use New York State highways and do not, under the present law, contribute anything toward their upkeep, would be made to pay their share.

Mr. Lord estimates that the levy of one cent a gallon would bring from \$6,000,000 to \$7,000,000 annually into the State treasury and that 25 per cent of that amount would come out of the pockets of the motorists from other States. The tax would be collected monthly from the distributors.

Under the proposed law 10 per cent of the money would go to the highways fund for the construction and upkeep of roads. The balance would be distributed among the counties on the basis of highway mileage. New York City would receive 50 per cent of the tax collected within the city. This provision was not in last year's bill.

No provision is made in the Lord bill for reduction of license fees on cars. Assemblyman Lord figures that the average amount of gasoline consumed is about 350 gallons per year, which would mean a tax of \$3.50 a year. Operators of buses and trucks naturally would pay more, he points out. He is optimistic as to its passage, as he says the majority of farm organizations, such as the Grange, the Farm Bureau and the Dairyman's League, have adopted resolutions in favor of a gasoline tax. However, there is some opposition upon which he probably has not figured.

## Fulton Buys Out Hudson

The Fulton Co., Milwaukee, Wis., recently completed negotiations for the purchase of the Hudson Motor Specialties Company, Philadelphia—manufacturers of the well-known New Model B Crank Case Repair Arm for Ford cars.

The trade will remember that the Hudson Repair Arm was first put on the market in 1917—and during that year and 1918 scored a tremendous success.

The Hudson Crank Case Repair Arm has two exclusive patented features which not only assure an exact fit, but also make installation quick and easy. These two features—two holes instead of one in the upper flange and an elongated hole in the cross arm—are so drilled that the Hudson Repair Arm will fit on either side of the crank case without throwing the engine out of alignment.

## Personals

**E. H. Broadwell**, vice president of the Fisk Rubber Co., announces the appointment of H. C. Hanson as assistant to the vice-president. Mr. Hanson, formerly connected with Republic Rubber Co. and Goodrich Company, will have his work confined largely to manufacturer's sales.

**E. A. Callinan**, news sales manager of the Rollin Motor Co., was introduced to the eastern dealer organization at the annual luncheon held in conjunction with the New York Show. Among the speakers at this meeting were Rollin H. White, J. G. Heaslet, and Walter Robbins. This company has brought out a new one-ton truck equipped with four-wheel brakes.

**John L. Carey** succeeds A. G. Boone as general sales manager of the United Motors Products Company. Mr. Carey, connected with the industry for fifteen years, is well known to the trade. He has been connected with Signal Motor Truck Co., the Hercules Motor Corp., Jefferson Forging Products Co., Kalamazoo Motors Corp. in executive capacities. As a consequence he brings with him a fund of knowledge of the motor truck industry. Mr. Boone will represent the company in Miami, Fla.

**C. P. Cartwright** of North East Service Inc. has just sailed on a trip through the Orient. The purpose of this trip is to establish North East service in the East by increasing the quota of authorized North East service stations and by building up closer relations with the 40 stations already established in the countries to be visited.

**E. S. Clark** has recently joined the Mason Motor Truck Co. as manager of the Atlanta branch, also territorial manager of the southeastern states. Mr. Clark was formerly district sales manager for the Garford Motor Truck Co. throughout the same territory.

**Herbert Clark**, sales engineer of the Spicer Mfg. Corp., has sailed for Europe to represent the Associated Spicer Companies in the Continental markets. His headquarters will be at 56 Ludgate Hill, London E. C. 4.

**W. E. Distrow** has left the automobile selling business to join forces with Harry S. Moore, the Northern Ohio distributor of Freuhauf trailers in Cleveland.

**F. T. Dunlap** has tendered his resignation as advertising manager of the Diamond State Fibre Company. He expects to locate in Dayton, O., as general manager of the Beaver Soap Company.

**David L. Gallup** has been elected vice-president in charge of plant operations of the Bendix Brake Co. Mr. Gallup is widely known, having been associated with the automotive industry almost since its inception. He was formerly consulting engineer with the Marmon Company and has also represented various manufacturers in the automotive field in the same capacity.

**W. G. Guthrie** has been appointed vice-president of the Lima Sheet Metal Products Co., Lima, O. Mr. Guthrie has been associated with the automotive industries for the last fifteen years, during which period he has held responsible production positions.

**E. C. Hall** of the Hal-Fur Truck Co., Cleveland, now in liquidation, is now utilizing his manufacturing experience in the transport operating field as partner in the firm of Clarke Transportation Co. of that city, which is now building trucks for their own use.

**C. C. Hanch**, vice-president of the National Automobile Chamber of Commerce, has been appointed general manager of the National Association of Finance Companies. Mr.

Hanch was selected because of his wide acquaintance with manufacturers, dealers and bankers.

**Raymond Hawley**, general sales manager of the Metropolitan Body Co., Inc., is permanently located at his new headquarters, 3rd St. & West Avenue, New York City. This is the Long Island City branch of the Metropolitan Body Co.

**Dominick Henry** who has been a member of the New York police department for 35 years, and who has risen to the rank of Deputy Chief Inspector, has been made president of the Checker Service Corporation.

**W. J. Kirkpatrick**, formerly service manager of A. Schrader's Son, Inc., has been appointed manager of the Akron branch of A. Schrader's Son, Inc. of Ohio, succeeding F. F. Myers. Mr. Kirkpatrick has been associated with Schrader for over fourteen years. He assumed his new duties on January 1, 1925.

**George Louis Lavery**, secretary and general manager of the Tire & Rim Association of America, Inc., died at the home of his daughter in Elkins Park, Pa. Mr. Lavery is a graduate of the Massachusetts Institute of Technology. In 1865 he became manager of the Chicago office of the Yale & Towne Mfg. Co. Since that time he has had many affiliations in executive capacities. He was appointed to the position which he held at the time of his death in 1922.

**W. P. Loudon**, formerly chief engineer of the Automotive Section of the Westinghouse Electric, is now affiliated with Dayton Engineering Laboratories Co. in the capacity of assistant chief engineer. Mr. Loudon has been with the General Electric, U. S. L. and during the war was in the Aircraft Accounting Division.

**James S. O'Rourke** has been appointed vice-president in charge of sales of the New Murray Body Corp., which is a consolidation of the C. R. Wilson Body Co., Towson Body Co. and J. C. Widman & Co., all of Detroit, Michigan. Mr. O'Rourke, who has always been connected with automotive industries, was formerly general sales manager of the J. W. Murray Mfg. Co.

**Jacob Pfeiffer**, president of the Miller Rubber Co., was elected a member of the board of directors of the reorganized Ohio Chamber of Commerce.

**Granville P. Rogers** has been appointed sales manager of the General Automotive Equipment Department of Johns-Manville, Inc., and will be located in New York City. Mr. Rogers was formerly general sales and advertising manager of the Pyrene Mfg. Co. and has always been active in the work of the Automotive Equipment Association.

**Paul C. Searies** is now directing the sales of the India Tire & Rubber Co. He will have as his assistants Harry Corbett and Lynn Harvey, who will serve as divisional sales managers. E. C. Lowney is directing the credit department.

**James H. Smith** has been appointed Pacific Coast manager for the Diamond T Motor Car Company. Mr. Smith was selected because of his experience in motor truck merchandising on the Pacific Coast. He is well known to truck and car owners, as well as dealers.

**Lon R. Smith** has been named sales and advertising manager of the type 20 headlight division of the Edmunds & Jones Corp. to supervise the introduction of this lamp type to the replacement trade of the country. Mr. Smith is well-known in the industry for his sales ability.

**F. H. Steele** will undertake the duties formerly handled by C. F. Haefner, having charge of the sales of Handy governors, manufactured by the Handy Governor Corp., Detroit, Michigan.

**A. G. Underwood**, formerly accessories sales manager B. F. Goodrich Rubber Co., Akron, Ohio, recently resigned to accept a position in a similar capacity with A. Schrader's Son, Inc., Brooklyn, N. Y.

**Major E. Von Hambach**, formerly of the United States Aircraft Division, is now director of sales and engineering of the Boyle Valve Company, Chicago.

**C. H. VanPelt** has been appointed sales and advertising manager, succeeding V. A. Davison, who has become affiliated with the General Motors Export Company.

**H. E. Westmoreland**, formerly with the McQuay-Norris Mfg. Co. in the capacity of sales executive, has formed the Westmoreland Co. in Amarillo, Texas, and will enter the jobbing field. The company will serve the dealers in that section of Texas with a complete line of replacement parts.

## Motor Transport Only in Primary Stage

### Walter T. White Foresees Continued Development and Advancement of Industry to a Still Better Plane

Pointing to numerous developments that he believes will be brought about in the automotive industry, Walter T. White, president of the White Motor Co., declared motor transportation is only in its primary stage.

Among the developments that Mr. White predicts are:

Expansion of the motor bus business into its own industry aided by wider adoption of legislation protecting bus operation and growing co-ordination of buses with electric railways.

Opening of wider fields for motor truck use through co-ordination with steam railroads.

Expansion of the highway system and the increased buying power of the automobile.

Growing influence of motor truck transportation, and its constructive effect on business that will reach the point of changing the architecture of building in crowded centers of population.

Evolution of the truck salesman into the broader field of transportation engineering, scientifically analyzing a prospective customer's hauling needs primarily from the standpoint of units and routes, rather than merely from the standpoint of the salesman's make of truck.

Better understanding among truck owners of the proper formula for operating trucks, with improved cost systems.

Better care of equipment, use of the right unit for the right job and a realization of the proper use of the road.

In dismissing the saturation point as "being out of date," Mr. White said:

"Today there is a better understanding of the economic benefit to be gained by the community through motor transportation on the public highways. There is no limit to motor transportation.

"Everything related to the automotive industry has a greater dollar purchasing power now than before the war.

"The old idea was to let motor transportation take care of itself. It was not figured into the plans for the future. Now, truck transportation is so important that it is going to influence many things of an industrial nature."



# Replacement Table—Corrected Monthly

Including Piston Ring Sizes, Carburetor Sizes, Hose Sizes, Fan Belt Sizes, Brake Lining Sizes and Truck Frame Dimensions

\*Note: Under Carburetor Inlet Diameter Will be Found Either the Size of Main Air Intake or the Gasoline Fuel Line  
Fan Belt Type: V—V-Shape, F—Flat, R—Round

NAME, MODEL AND TONNAGE		ENGINE										BRAKE LINING				FRAME									
		Piston Rings		Carburetor		Upper Hose		Lower Hose		Fan Belt		Service		Emergency		Length		Width							
No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis	
Ace 40-1 1/2	3	3	1 1/4	1 1/4	V	7	1 1/4	8	1 1/4	40 3/4	2	2	12	13 1/4	3 1/4	4	12	13 1/4	3 1/4	4	122 1/4	76 3/4	215 1/4	32	9 1/2
Ace 60-3	3	3	1 1/4	1 1/4	V	7	1 1/4	8	1 1/4	40 3/4	2	2	12	13 1/4	3 1/4	4	12	13 1/4	3 1/4	4	108 3/4	84 1/4	241	34	10 1/2
Ace 20L-1 1/2	3	3	1 1/4	1 1/4	V	8	1 1/4	11	1 1/4	34	1 1/4	1 1/4	12	13 1/4	3 1/4	4	12	13 1/4	3 1/4	4	123 3/4	63 3/4	200	34	9 1/4
Ace 40-2	4	4	1 1/4	1 1/4	V	11 1/2	1 1/2	12 1/2	1 1/2	39 1/2	1 1/2	1 1/2	12	13 1/4	3 1/4	4	12	13 1/4	3 1/4	4	123 3/4	74 3/4	214 1/4	34	10
Ace 40L-2	4	4	1 1/4	1 1/4	V	11 1/2	1 1/2	12 1/2	1 1/2	39 1/2	1 1/2	1 1/2	12	13 1/4	3 1/4	4	12	13 1/4	3 1/4	4	132 3/4	79 3/4	223 1/2	34	10 1/2
Ace 60-3	4	4	1 1/4	1 1/4	V	11 1/2	1 1/2	12 1/2	1 1/2	39 1/2	1 1/2	1 1/2	12	13 1/4	3 1/4	4	12	13 1/4	3 1/4	4	140 1/4	79 3/4	235 1/2	34	10 1/2
Ace 60L-3	4	4	1 1/4	1 1/4	V	12 3/4	1 3/4	12 3/4	1 3/4	41 3/4	1 3/4	1 3/4	15 1/2	15 1/2	3 3/4	2	15 1/2	15 1/2	3 3/4	2	220 3/4	127 3/4	312	41 1/4	6
Ace K (Bus)	3	3	1 1/4	1 1/4	V	10	1 1/4	12	1 1/4	40 3/4	1 1/4	1 1/4	15 1/2	15 1/2	3 3/4	2	15 1/2	15 1/2	3 3/4	2	150 3/4	95 3/4	243	36	10 1/2
Ace 90-4 1/2	4	4	1 1/4	1 1/4	V	10	1 1/4	10	1 1/4	40 3/4	1 1/4	1 1/4	15 1/2	15 1/2	3 3/4	2	15 1/2	15 1/2	3 3/4	2	153 3/4	96 3/4	255	37	10 1/2
Ace 90L-4 1/2	4	4	1 1/4	1 1/4	V	10	1 1/4	10	1 1/4	40 3/4	1 1/4	1 1/4	15 1/2	15 1/2	3 3/4	2	15 1/2	15 1/2	3 3/4	2	159 3/4	99 3/4	261	37	10
Ace 125-6 1/2	4	4	1 1/4	1 1/4	V	10	1 1/4	10	1 1/4	40 3/4	1 1/4	1 1/4	15 1/2	15 1/2	3 3/4	2	15 1/2	15 1/2	3 3/4	2	159 3/4	99 3/4	261	37	10
American-LaFrance W	3	3	1 1/4	1 1/4	V	5 1/2	1 1/2	10 1/2	1 1/2	36	2	2	17	17	3 1/4	4	17	17	3 1/4	4	132	81 1/4	236 1/4	33	10
American-LaFrance W	3	3	1 1/4	1 1/4	V	5 1/2	1 1/2	10 1/2	1 1/2	36	2	2	17	17	3 1/4	4	17	17	3 1/4	4	156	98 1/4	260 1/4	33	10
American-LaFrance W	3	3	1 1/4	1 1/4	V	9	1 1/2	11 1/2	1 1/2	42	2	2	21	21	4	4	21	21	4	4	180	110 3/4	284 1/4	35 1/4	9
American-LaFrance Y	3	3	1 1/4	1 1/4	V	9	1 1/2	11 1/2	1 1/2	42	2	2	21	21	4	4	21	21	4	4	144 1/4	89 3/4	268 1/4	35 1/4	9
American-LaFrance Y	3	3	1 1/4	1 1/4	V	9	1 1/2	11 1/2	1 1/2	42	2	2	21	21	4	4	21	21	4	4	168 1/4	103 3/4	310 1/4	35 1/4	9
American-LaFrance Y	3	3	1 1/4	1 1/4	V	9	1 1/2	11 1/2	1 1/2	42	2	2	21	21	4	4	21	21	4	4	210 1/4	124 3/4	344 1/4	36	10
American-LaFrance Y	3	3	1 1/4	1 1/4	V	9	1 1/2	11 1/2	1 1/2	42	2	2	21	21	4	4	21	21	4	4	144 1/4	90 3/4	292 1/4	35 1/4	9
American-LaFrance Y	3	3	1 1/4	1 1/4	V	9	1 1/2	11 1/2	1 1/2	42	2	2	21	21	4	4	21	21	4	4	192 1/4	113 3/4	310 1/4	36	10
American-LaFrance Y	3	3	1 1/4	1 1/4	V	9	1 1/2	11 1/2	1 1/2	42	2	2	21	21	4	4	21	21	4	4	210 1/4	125 3/4	310 1/4	36	10
American-LaFrance V	3	3	1 1/4	1 1/4	V	10	1 1/2	16 1/2	1 1/2	33 1/2	1 1/2	1 1/2	13	13 1/4	3 1/4	4	13	13 1/4	3 1/4	4	Opt	71 3/4	215 3/4	32	9 1/2
Armleder 30-1 1/2	3	3	1 1/4	1 1/4	V	12	1 1/2	17 1/2	1 1/2	35 1/2	2	2	17	17	3 1/4	4	17	17	3 1/4	4	Opt	77 3/4	228 3/4	32	10
Armleder 50-2 1/2	4	4	1 1/4	1 1/4	V	12	1 1/2	17 1/2	1 1/2	35 1/2	2	2	17	17	3 1/4	4	17	17	3 1/4	4	Opt	77 3/4	228 3/4	32	10
Atterbury 24-R	4	4	1 1/4	1 1/4	V	10 1/2	1 1/2	16	1 1/2	40 3/4	1 1/2	1 1/2	15 1/2	15 1/2	3 3/4	4	15 1/2	15 1/2	3 3/4	4	119 1/4	76 3/4	211 1/4	34	9 1/2
Atterbury 22C-2 1/2	4	4	1 1/4	1 1/4	V	10 1/2	1 1/2	16	1 1/2	40 3/4	1 1/2	1 1/2	15 1/2	15 1/2	3 3/4	4	15 1/2	15 1/2	3 3/4	4	129 1/4	78 3/4	225 3/4	34	9 1/2
Atterbury 22D-3 1/2	4	4	1 1/4	1 1/4	V	10 1/2	1 1/2	16	1 1/2	40 3/4	1 1/2	1 1/2	15 1/2	15 1/2	3 3/4	4	15 1/2	15 1/2	3 3/4	4	129 1/4	78 3/4	225 3/4	34	9 1/2
Atterbury 24E	4	4	1 1/4	1 1/4	V	5	1 1/2	9 1/2	1 1/2	49 1/2	2	2	20 1/2	20 1/2	2	1/4	20 1/2	20 1/2	2	1/4	159 1/4	89 3/4	263	37 1/4	10 1/2
Autocar XXI-F-1 1/2	4	4	1 1/4	1 1/4	V	5	1 1/2	9 1/2	1 1/2	49 1/2	2	2	20 1/2	20 1/2	2	1/4	20 1/2	20 1/2	2	1/4	91	67	156	34	9 1/2
Autocar XXI-G-1 1/2	4	4	1 1/4	1 1/4	V	5	1 1/2	9 1/2	1 1/2	49 1/2	2	2	20 1/2	20 1/2	2	1/4	20 1/2	20 1/2	2	1/4	114	80 3/4	223 1/4	34 1/4	10
Autocar XXVI-M4-6	3	3	1 1/4	1 1/4	V	3 1/2	1 1/2	3 1/2	1 1/2	47 1/2	2	2	20 1/2	20 1/2	2	1/4	20 1/2	20 1/2	2	1/4	139 1/4	116 3/4	259 1/4	34 1/4	10 1/2
Autocar XXVI-L4-6	3	3	1 1/4	1 1/4	V	3 1/2	1 1/2	3 1/2	1 1/2	47 1/2	2	2	20 1/2	20 1/2	2	1/4	20 1/2	20 1/2	2	1/4	175 1/4	76 3/4	213 1/4	34 1/4	10 1/2
Autocar XXVII-H3	3	3	1 1/4	1 1/4	V	3 1/2	1 1/2	3 1/2	1 1/2	47 1/2	2	2	20 1/2	20 1/2	2	1/4	20 1/2	20 1/2	2	1/4	131 1/4	76 3/4	213 1/4	34 1/4	10 1/2
Autocar XXVII-H3	3	3	1 1/4	1 1/4	V	3 1/2	1 1/2	3 1/2	1 1/2	47 1/2	2	2	20 1/2	20 1/2	2	1/4	20 1/2	20 1/2	2	1/4	155 1/4	100	237 1/4	34 1/4	10 1/2
Available J-H-1 1/2	4	4	1 1/4	1 1/4	V	11	1 1/2	14	1 1/2	40	2	2	13 1/2	13 1/2	3 1/4	4	13 1/2	13 1/2	3 1/4	4	120	84 1/4	212	32	9
Available J-H-2	4	4	1 1/4	1 1/4	V	12	1 1/2	14	1 1/2	40	2	2	13 1/2	13 1/2	3 1/4	4	13 1/2	13 1/2	3 1/4	4	144	85 3/4	226 1/2	32	9
Available J-H-2 1/2	4	4	1 1/4	1 1/4	V	12	1 1/2	14	1 1/2	40	2	2	13 1/2	13 1/2	3 1/4	4	13 1/2	13 1/2	3 1/4	4	168	106 3/4	254 1/4	36	9
Available J-H3	4	4	1 1/4	1 1/4	V	12	1 1/2	14	1 1/2	40	2	2	13 1/2	13 1/2	3 1/4	4	13 1/2	13 1/2	3 1/4	4	168	112 3/4	263 1/4	38	9
Available J-H5	3	3	1 1/4	1 1/4	V	12	1 1/2	14	1 1/2	40	2	2	13 1/2	13 1/2	3 1/4	4	13 1/2	13 1/2	3 1/4	4	168	112 3/4	263 1/4	38	9
Bessemer G-1	3	3	1 1/4	1 1/4	V	11 1/2	1 1/2	10	1 1/2	42	2	2	13 1/2	13 1/2	3 1/4	4	13 1/2	13 1/2	3 1/4	4	98 1/4	58 3/4	182 1/4	34	9 1/2
Bessemer H-2-1 1/2	3	3	1 1/4	1 1/4	V	12	1 1/2	5	1 1/2	35 1/2	1 1/2	1 1/2	20 1/2	20 1/2	1 1/2	1/4	20 1/2	20 1/2	1 1/2	1/4	116	76	203	34	9 1/2
Bessemer J2-2 1/2	3	3	1 1/4	1 1/4	V	8 1/2	1 1/2	8 1/2	1 1/2	40 1/2	1 1/2	1 1/2	11	11	3	1/4	11	11	3	1/4	142 1/4	92 1/4	229	34	10 1/2
Bethlehem KN-1	3	3	1 1/4	1 1/4	V	8 1/2	1 1/2	8 1/2	1 1/2	40 1/2	1 1/2	1 1/2	11	11	3	1/4	11	11	3	1/4	89 1/4	56 1/4	175	32 1/4	9 1/4
Bethlehem GN-2	3	3	1 1/4	1 1/4	V	12	1 1/2	17	1 1/2	33 1/2	1 1/2	1 1/2	12	12	3 1/4	1/4	12	12	3 1/4	1/4	116 1/4	74	208 1/4	34 1/4	9 1/4
Bethlehem L	3	3	1 1/4	1 1/4	V	12	1 1/2	12	1 1/2	33 1/2	1 1/2	1 1/2	12	12	3 1/4	1									

## Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE										BRAKE LINING								FRAME						
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length			Width	
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	★ Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Commerce 11-2000.....	3	1 1/4	1 1/4	1 1/4	V	10	2	10	2	44	3 1/4	V	50	2	1 1/4	2	48 1/2	2	1 1/4	2	92 1/2	53 1/2	193	34	9
Commerce 14B-3000.....	4	1 1/4	1 1/4	1 1/4	V	10	2	10	2	39 1/4	1 1/4	V	11	1 1/4	1 1/4	4	11 1/4	1 1/4	1 1/4	4	117	75	210	34	8 1/2
Commerce 25B-5000.....	4	1 1/4	1 1/4	1 1/4	V	9 1/2	1 1/4	15 1/2	1 1/4	42	1 1/4	V	13	1 1/4	1 1/4	4	13 1/4	1 1/4	1 1/4	4	132	84	228 1/2	34	12 1/2
Concord E-1.....	4	1 1/4	1 1/4	1 1/4	H	7	1 1/4	9 1/2	1 1/4	33 1/2	2	F	12	1 1/4	1 1/4	4	12 1/4	1 1/4	1 1/4	4	.....	.....	.....	32 1/4	.....
Concord G-1.....	4	1 1/4	1 1/4	1 1/4	H	7	1 1/4	9 1/2	1 1/4	33 1/2	2	F	13 1/2	1 1/4	1 1/4	4	13 1/2	1 1/4	1 1/4	4	.....	.....	.....	32 1/4	.....
Concord H-2.....	4	1 1/4	1 1/4	1 1/4	H	7	1 1/4	9 1/2	1 1/4	33 1/2	2	F	12	1 1/4	1 1/4	4	12 1/4	1 1/4	1 1/4	4	.....	.....	.....	32 1/4	.....
Concord J-2 1/2.....	4	1 1/4	1 1/4	1 1/4	H	7	1 1/4	9 1/2	1 1/4	33 1/2	2	F	13 1/2	1 1/4	1 1/4	4	13 1/2	1 1/4	1 1/4	4	.....	.....	.....	32 1/4	.....
Concord JL-3.....	4	1 1/4	1 1/4	1 1/4	H	7	1 1/4	9 1/2	1 1/4	33 1/2	2	F	13 1/2	1 1/4	1 1/4	4	13 1/2	1 1/4	1 1/4	4	.....	.....	.....	32 1/4	.....
Corbett S-1/2.....	3	1 1/4	1 1/4	1 1/4	H	8	2	14	2	38	1 1/4	F	16 1/2	1 1/4	1 1/4	4	16 1/2	1 1/4	1 1/4	4	103	59	196	34	11 1/4
Corbett E-1.....	3	1 1/4	1 1/4	1 1/4	H	9	2	12	2	41	1 1/4	F	16 1/2	1 1/4	1 1/4	4	16 1/2	1 1/4	1 1/4	4	104	62	198	34	11 1/4
Corbett D-1 1/2.....	3	1 1/4	1 1/4	1 1/4	V	11	1 1/4	15	1 1/4	46	1 1/4	F	18	2	1 1/4	4	18	2	1 1/4	4	110	72	206	34	11 1/4
Corbett C-2.....	3	1 1/4	1 1/4	1 1/4	V	13	1 1/4	15	1 1/4	46	1 1/4	F	22 1/2	2 1/4	1 1/4	4	22 1/2	2 1/4	1 1/4	4	132	78	230	35	10 1/4
Corbett B-2 1/2.....	3	1 1/4	1 1/4	1 1/4	V	13	1 1/4	15	1 1/4	46	1 1/4	F	22 1/2	2 1/4	1 1/4	4	22 1/2	2 1/4	1 1/4	4	136	78	232	35	10 1/4
Corbett R-2 1/2-3.....	3	1 1/4	1 1/4	1 1/4	V	14	1 1/4	8	1 1/4	46	1 1/4	F	22 1/2	2 1/4	1 1/4	4	22 1/2	2 1/4	1 1/4	4	153	92	254	35	10 1/4
Corbett A-3 1/2-4.....	3	1 1/4	1 1/4	1 1/4	V	14	1 1/4	8	1 1/4	46	1 1/4	F	21	4	1 1/4	2	21	3	1 1/4	2	168	106	266	35	9
Corbett AA-5.....	3	1 1/4	1 1/4	1 1/4	V	13	2	14	2	36	2	F	68 1/2	3	1 1/4	2	68 1/2	3	1 1/4	2	168	106	268	38	10
Day-Elder G-1 1/2.....	4	1 1/4	1 1/4	1 1/4	V	.....	1 1/4	.....	1 1/4	.....	1 1/4	F	11 1/4	3 1/4	1 1/4	4	11 1/4	3 1/4	1 1/4	4	105 1/4	61 1/4	191	35	10 1/4
Day-Elder H-2.....	4	1 1/4	1 1/4	1 1/4	V	.....	1 1/4	.....	1 1/4	.....	1 1/4	F	11 1/4	3 1/4	1 1/4	4	11 1/4	3 1/4	1 1/4	4	132 1/4	77 1/4	218	34	9 1/4
Day-Elder I-2 1/2.....	4	1 1/4	1 1/4	1 1/4	V	.....	1 1/4	.....	1 1/4	.....	1 1/4	F	13 1/4	3 1/4	1 1/4	4	13 1/4	3 1/4	1 1/4	4	123 1/4	77 1/4	216	35	10 1/4
Day-Elder J-3.....	4	1 1/4	1 1/4	1 1/4	V	.....	1 1/4	.....	1 1/4	.....	1 1/4	F	13 1/4	3 1/4	1 1/4	4	13 1/4	3 1/4	1 1/4	4	115 1/4	77 1/4	214 1/2	35	10 1/4
Day-Elder K-4.....	4	1 1/4	1 1/4	1 1/4	V	.....	1 1/4	.....	1 1/4	.....	1 1/4	F	15 1/4	3 1/4	1 1/4	4	15 1/4	3 1/4	1 1/4	4	121	86	220	37	8 1/4
Day-Elder L-5.....	4	1 1/4	1 1/4	1 1/4	V	.....	1 1/4	.....	1 1/4	.....	1 1/4	F	17 1/4	4	1 1/4	4	17 1/4	4	1 1/4	4	148	88	253	37	10 1/4
Diamond T-75-1/2-1.....	3	1 1/4	1 1/4	1 1/4	V	8	1 1/4	10 1/2	1 1/4	33 1/4	1 1/4	F	22	2 1/4	1 1/4	2	46 1/2	2 1/4	1 1/4	1	90	57 1/2	182 1/2	34	.....
Diamond T-03-1-1 1/4.....	3	1 1/4	1 1/4	1 1/4	V	9	1 1/4	6	1 1/4	35	2	F	48	2 1/4	1 1/4	4	33	2 1/4	1 1/4	2	Opt	.....	.....	34	.....
Diamond T-T-1 1/4.....	3	1 1/4	1 1/4	1 1/4	V	9	1 1/4	6	1 1/4	35	2	F	11 1/4	3 1/4	1 1/4	4	11 1/4	3 1/4	1 1/4	4	Opt	.....	.....	34	.....
Diamond T-U2-2 1/2.....	3	1 1/4	1 1/4	1 1/4	V	9	1 1/4	6	1 1/4	35	2	F	13 1/4	3 1/4	1 1/4	4	13 1/4	3 1/4	1 1/4	4	Opt	.....	.....	34	.....
Diamond TK-3 1/2.....	3	1 1/4	1 1/4	1 1/4	V	10	1 1/4	10	1 1/4	35	2	F	15 1/4	3 1/4	1 1/4	4	15 1/4	3 1/4	1 1/4	4	Opt	.....	.....	37	.....
Diamond T-S-5.....	3	1 1/4	1 1/4	1 1/4	V	9	2	21	2	40 1/2	2	F	18	4	1 1/4	4	17 1/4	4	1 1/4	4	Opt	.....	.....	37	.....
Dixon Model D.....	4	1 1/4	1 1/4	1 1/4	V	11	1 1/4	8	1 1/4	41	1 1/4	F	13	3 1/4	1 1/4	4	13	3 1/4	1 1/4	4	126	71	221 1/2	34 1/2	9 1/4
Dixon Model C.....	4	1 1/4	1 1/4	1 1/4	V	12	1 1/4	9	1 1/4	42	1 1/4	F	13	3 1/4	1 1/4	4	13	3 1/4	1 1/4	4	Opt	71	221 1/2	34 1/2	9 1/4
Dixon Model A.....	4	1 1/4	1 1/4	1 1/4	V	12	1 1/4	10	1 1/4	42	1 1/4	F	13	3 1/4	1 1/4	4	13	3 1/4	1 1/4	4	Opt	71	221 1/2	36	9 1/4
Dorris K-4-2 1/2.....	4	1 1/4	1 1/4	1 1/4	V	2 1/2	1 1/4	6 1/4	1 1/4	42 1/2	2	F	13 1/4	3 1/4	1 1/4	4	13 1/4	3 1/4	1 1/4	4	142 1/4	96 1/4	233 1/2	34	9
Dorris K-7-3 1/2.....	4	1 1/4	1 1/4	1 1/4	V	2 1/2	1 1/4	6 1/4	1 1/4	42 1/2	2	F	15 1/4	3 1/4	1 1/4	4	15 1/4	3 1/4	1 1/4	4	178 1/4	130 1/4	270 1/2	36	9
Double Drive TT-3.....	4	1 1/4	1 1/4	1 1/4	V	12	2	19	1 1/4	34	2	F	8 1/4	4	1 1/4	4	18	4	1 1/4	4	132	100	216	34	9 1/4
Duplex G.....	4	1 1/4	1 1/4	1 1/4	V	.....	1 1/4	.....	1 1/4	.....	.....	F	11	2 1/4	1 1/4	4	11	2 1/4	1 1/4	4	102	.....	.....	34	.....
Duplex GH.....	4	1 1/4	1 1/4	1 1/4	V	.....	1 1/4	.....	1 1/4	.....	.....	F	19	2	1 1/4	4	19	2	1 1/4	4	112	.....	.....	34	.....
Duplex A.....	3	1 1/4	1 1/4	1 1/4	V	.....	1 1/4	.....	1 1/4	.....	.....	F	20	2 1/4	1 1/4	4	20	2 1/4	1 1/4	4	121	.....	.....	34	.....
Duplex AC.....	3	1 1/4	1 1/4	1 1/4	V	.....	1 1/4	.....	1 1/4	.....	.....	F	26	2	1 1/4	4	26	2	1 1/4	4	140	.....	.....	34	.....
Duplex E.....	3	1 1/4	1 1/4	1 1/4	V	.....	1 1/4	.....	1 1/4	.....	.....	F	10	2 1/4	1 1/4	2	52	2 1/4	1 1/4	4	128	.....	.....	40	.....
Duplex FD.....	4	1 1/4	1 1/4	1 1/4	V	.....	1 1/4	.....	1 1/4	.....	.....	F	26 1/4	2	1 1/4	4	26 1/4	2	1 1/4	4	Opt	.....	.....	34	.....
Eagle 100-2.....	4	1 1/4	1 1/4	1 1/4	V	14	2	16	1 1/4	36	1 1/4	F	49 1/2	3	1 1/4	2	46	2	1 1/4	2	Opt	.....	.....	36	.....
Eagle 101-1 1/4.....	4	1 1/4	1 1/4	1 1/4	V	14	2	16	1 1/4	34	1 1/4	F	21	2 1/4	1 1/4	4	21	2 1/4	1 1/4	4	Opt	.....	.....	31	.....
Eagle 104-2-3.....	4	1 1/4	1 1/4	1 1/4	V	14	2	16	1 1/4	36	1 1/4	F	49 1/2	3	1 1/4	2	46	2	1 1/4	2	Opt	.....	.....	32	.....
Fageol 1 1/2-2.....	3	1 1/4	1 1/4	1 1/4	V	10	2 1/4	20	2 1/4	37 1/4	1 1/4	F	19 1/4	1 1/4	1 1/4	2	19 1/4	1 1/4	1 1/4	2	120	.....	.....	30	



## Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE										BRAKE LINING								FRAME							
	Piston Rings		Carburetor		Upper Hose		Lower Hose		Fan Belt		Service				Emergency				Length		Width					
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis	
Gramm-Bernstein 125-2½	3	1½	1½	1½	V	4½	1½	12	1½	32	2	2	F	8	5	1½	2	45	2	1½	4	4	126	77½	214	32
Gramm-Bernstein 30-3	3	1½	1½	1½	V	11	1½	9	1½	33½	2	2	F	22½	2½	1½	4	22½	2½	1½	4	4	129½	81½	226½	36
Gramm-Bernstein 75P-3½	3	1½	1½	1½	V	11	1½	9	1½	33½	2	2	F	22½	2½	1½	4	22½	2½	1½	4	4	129½	81½	226½	36
Gramm-Bernstein 40-4	3	1½	1½	1½	V	23½	2	13½	1½	40½	2	1	F	32½	2½	1½	4	32½	2½	1½	4	4	144	87½	240½	36
Gramm-Bernstein 50-5-6	3	1½	1½	1½	V	12	1½	14½	2½	29	1	1	F	22½	2½	1½	4	48	2	1½	4	4	132	97	263½	36
Grass Premier 40A	4	1½	1½	1½	V	14	2½	16	2½	...	...	...	...	48½	2	1½	2	47	1½	1½	2	2	108	66	204	31
Grass Premier 60A1½	4	1½	1½	1½	V	14	2½	16	2½	...	...	...	...	48½	2	1½	2	47	1½	1½	2	2	120	83	214	31
Grass Premier 70A2½	4	1½	1½	1½	V	11	1½	11	1½	40	1½	1½	F	15½	3½	1½	4	15½	3½	1½	4	4	95	83	192	35
Grass Premier 90A3½	3	1½	1½	1½	V	8	1½	17½	1½	37½	1½	1½	F	49	2½	1½	4	47	1½	1½	4	4	72	192	32	11½
G. W. W. Super	4	1½	1½	1½	V	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Harvey WOA-2	4	1½	1½	1½	V	11	2	14	1½	35½	2	2	F	45	2	1½	2	45	2	1½	2	2	139	87	242½	32
Harvey WFB-2½	4	1½	1½	1½	V	12	2	14	1½	35½	2	2	F	50	2½	1½	2	50	2½	1½	2	2	139	87	242½	32
Harvey WHB-3½	4	1½	1½	1½	V	11	2	14	1½	36½	2	2	F	20½	4	1½	2	20½	4	1½	2	2	151½	85½	258½	35
Harvey WFT-6	4	1½	1½	1½	V	12	2	14	1½	36½	2	2	F	50	2½	1½	2	50	2½	1½	2	2	86	52½	189	32
Harvey WHT-10	4	1½	1½	1½	V	12	2	14	1½	36½	2	2	F	20½	4	1½	2	20½	4	1½	2	2	86	52½	191½	35
Hawkeye O	4	1½	1½	1½	V	12	2	9	1½	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hawkeye K	4	1½	1½	1½	V	12	2	9	1½	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hawkeye M	4	1½	1½	1½	V	12	2	9	1½	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hawkeye N	4	1½	1½	1½	V	14	2½	12	1½	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Indiana 15-1½	3	1½	1½	1½	V	17	1½	14	1½	38½	1	1	F	19	2	1½	4	19	2	1½	4	4	114	67½	213½	34
Indiana 20-2	3	1½	1½	1½	V	6	1½	13	1½	26½	1	1	F	22½	2½	1½	4	22½	2½	1½	4	4	126	74½	226½	33
Indiana 25-2½	3	1½	1½	1½	V	6	1½	13	1½	26½	1	1	F	22½	2½	1½	4	22½	2½	1½	4	4	138	81	229	33
Indiana 35-3½	3	1½	1½	1½	V	10	1½	17½	1½	40½	1	1	F	65	3	1½	2	65	3	1½	2	2	139	79½	244½	34½
Indiana 51-5	3	1½	1½	1½	V	9½	1½	17½	1½	30½	1	1	F	38	2	1½	2	36	2	1½	2	2	152½	87	260	37½
Inter'l S-2000 lbs.-Sp. Tr.	4	1½	1½	1½	V	6½	1½	6½	1½	43½	1	1	F	43½	2½	1½	2	43½	2½	1½	2	2	101½	57½	194	34
International 33-3000 lbs.	4	1½	1½	1½	V	6½	1½	6½	1½	43½	1	1	F	50	2½	1½	2	50	2½	1½	2	2	109	59½	202	32½
International 43-4000 lbs.	4	1½	1½	1½	V	9	2½	14½	2	46	1½	1½	F	50	2½	1½	2	50	2½	1½	2	2	116½	67½	213½	34
International 63-6000	4	1½	1½	1½	V	9	2½	14½	2	51	1½	1½	F	50	2½	1½	2	50	2½	1½	2	2	146	87½	244	34
International 103	4	1½	1½	1½	V	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kelly-Springfield K70-1½-2	4	1½	1½	1½	V	12½	1½	16	1½	41½	1	1	F	17½	2½	1½	4	17½	2½	1½	4	4	132	81	230	34
Kelly-Springfield K41-3½-5	4	1½	1½	1½	V	6½	1½	24	1½	59½	1	1	F	3½	4½	1½	2	58	2½	1½	2	2	144	87	248	36
Kelly-Springfield K61-5 to 7	4	1½	1½	1½	V	6½	1½	24	1½	59½	1	1	F	3½	4½	1½	2	58	2½	1½	2	2	144	87	248	36
Kelly-Springfield K-75-2½	4	1½	1½	1½	V	7	1½	13	1½	41½	1	1	F	17½	2½	1½	4	21½	2½	1½	4	4	138	85	238	34
Kelly-Springfield K-76-2½	4	1½	1½	1½	V	12	2	14	1½	36	2	2	F	20	2½	1½	4	20	2½	1½	4	4	133	85	238	34
Kenworth KS-2½	4	1½	1½	1½	V	12	2	14	1½	36	2	2	F	46	2	1½	2	46	2	1½	2	2	114	...	...	32
Kenworth M-1½	4	1½	1½	1½	V	13½	2	16	1½	40	1½	1½	F	56	2½	1½	2	56	2½	1½	2	2	144	...	...	36½
Kenworth L-3	4	1½	1½	1½	V	11	1½	16	1½	40	1½	1½	F	11½	3½	1½	4	11½	3½	1½	4	4	Opt	Opt	Opt	32
King Zeidler 1	4	1½	1½	1½	V	11	1½	16	1½	40	1½	1½	F	12½	3½	1½	4	12½	3½	1½	4	4	Opt	Opt	Opt	32
King Zeidler 1½	4	1½	1½	1½	V	12	1½	16	1½	41	1½	1½	F	13½	3½	1½	4	13½	3½	1½	4	4	Opt	Opt	Opt	32
King Zeidler 2½	4	1½	1½	1½	V	12	1½	16	1½	42	1½	1½	F	16	3½	1½	4	16	3½	1½	4	4	Opt	Opt	Opt	36
King Zeidler 3½	4	1½	1½	1½	V	14	2	22	2	42	1½	1½	F	18	4	1½	4	18	4	1½	4	4	Opt	Opt	Opt	36
King Zeidler 5	4	1½	1½	1½	V	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kissel 1 Ton.	3	1½	1½	1½	V	12½	1½	10	1½	46½	2	2	F	11	3	1½	4	12	3½	1½	4	4	102	58½	201	34
Kissel Utility 1½	3	1½	1½	1½	V	12½	1½	10	1½	46½	2	2	F	19	2	1½	4	12	3½	1½	4	4	120	70½	219	34
Kissel Freight 2	3	1½	1½	1½	V	13½	1½	10	1½	49	2	2	F	14	3½	1½	4	14	3½	1½	4	4	144	80	243	34
Kissel Heavy Duty 4	3	1½	1½	1½	V	11	1½	13	1½	45½	1	1	F	56	2½	1½	2	56	2½	1½	2	2	156	94½	251½	36
Kleiber 1½	4	1½	1½	1½	V	12	1½	14	1½	47½	1	1	F	13	3½	1½	4	13	3½	1½	4	4	114	...	...	34
Kleiber 2½	4	1½	1½	1½	V	13	1½	14½	1½	47½	1	1	F	14	3½	1½	4	14	3½	1½	4	4	150	...	...	38
Kleiber 3½	4	1½	1½	1½	V	14	1½	15	1½	48½	1	1	F	16	3½	1½	4	16	3½	1½	4	4	156	...	...	38
Kleiber 5	4	1½	1½	1½	V	14	1½	15	1½	48½	1	1	F	18	4	1½	4	18	4	1½	4	4	171	...	...	38
Krebs J-24	4	1½	1½	1½	V	8	1½	17	1½	42	1½	1½	F	11½	2½	1½	4	11½	2½	1½	4	4	119	64	214	33
Krebs 50	4	1½	1½	1½																						

## Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE											BRAKE LINING								FRAME					
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length		Width		
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Moreland EX-2	3	1 1/4	1 1/4	1 1/4	V	9	1 1/2	14	1 1/2	42	1 1/4	F	12	3 1/4	1 1/4	4	12	3 1/4	1 1/4	4	132	79 1/4	226 1/4	34	.....
Moreland AX-3	3	1 1/4	1 1/4	1 1/4	V	9	1 1/2	13	1 1/2	42	2	F	13 1/2	3 1/4	1 1/4	4	13 1/2	3 1/4	1 1/4	4	174	101 1/4	253	34	.....
Moreland RX-5	4	1 1/4	1 1/4	1 1/4	V	8	1 1/2	14 1/2	1 1/2	42	2	F	15 1/2	3 1/4	1 1/4	4	15 1/2	3 1/4	1 1/4	4	192	115 1/4	271	38	.....
Moreland RC-Bus	3	1 1/4	1 1/4	1 1/4	H	8	1 1/2	11 1/4	1 1/2	24	1 1/2	F	49	2 1/2	1 1/4	2	46	2 1/2	1 1/4	2	156	100	256	34	7
Moreland EC-Bus	3	1 1/4	1 1/4	1 1/4	H	9	1 1/2	13	1 1/2	42	1 1/2	F	13 1/2	3 1/4	1 1/4	4	13 1/2	3 1/4	1 1/4	4	152	102	254	34	8
Moreland AC-Bus	3	1 1/4	1 1/4	1 1/4	H	9	1 1/2	13	1 1/2	42	1 1/2	F	15 1/2	3 1/4	1 1/4	4	15 1/2	3 1/4	1 1/4	4	171	114 1/4	271	44	7
Nash 2018-1-1 1/2	4	1 1/4	1 1/4	1 1/4	V	3	1 1/2	7 3/4	1 1/4	36	1	F	49 1/2	2	1 1/4	2	20 1/2	2 1/2	1 1/4	1	104 1/2	61	193	30 1/2	9 1/2
Nash 3018-2-2 1/2	4	1 1/4	1 1/4	1 1/4	V	3	1 1/2	7 3/4	1 1/4	36	1	F	50 1/2	2	1 1/4	2	20 1/2	2 1/2	1 1/4	1	118 1/2	65	207	31 1/2	9 1/2
Nash 4017-2-2 1/2	3	1 1/4	1 1/4	1 1/4	V	7	1 1/2	15	1 1/4	44	2	F	49 1/2	2 1/2	1 1/4	4	25 1/2	2 1/2	1 1/4	1	117 1/2	85 1/2	202 1/2	38 1/2	14 1/2
National M	4	1 1/4	1 1/4	1 1/4	V	16	2 1/2	15	2 1/4	40	1 1/2	F	12	3 1/4	1 1/4	4	12	3 1/4	1 1/4	4	116	65	208	34	9 1/2
National T	3	1 1/4	1 1/4	1 1/4	V	12	1 1/2	18	1 1/2	40	1 1/2	F	13 1/2	3 1/4	1 1/4	4	13 1/2	3 1/4	1 1/4	4	123 1/2	80 1/2	220	34	9 1/2
National NB-3 1/2	3	1 1/4	1 1/4	1 1/4	V	10	1 1/2	17	1 1/2	40	1 1/2	F	16	3 1/4	1 1/4	4	16	3 1/4	1 1/4	4	142	91	243	36	8 1/2
Nelson & LeMoon G-1	4	1 1/4	1 1/4	1 1/4	V	8	1 1/2	3 1/2	1 1/2	39 1/2	1 1/2	F	11 1/2	2 1/2	1 1/4	2	11 1/2	2 1/2	1 1/4	2	Opt	.....	.....	.....	11
Nelson & LeMoon G-1 1/2	4	1 1/4	1 1/4	1 1/4	V	8	1 1/2	3 1/2	1 1/2	39 1/2	1 1/2	F	11 1/2	2 1/2	1 1/4	2	11 1/2	2 1/2	1 1/4	2	Opt	.....	.....	.....	11
Nelson & LeMoon G-2	4	1 1/4	1 1/4	1 1/4	V	9	1 1/2	3 1/2	1 1/2	41 1/4	1 1/4	F	12	3 1/4	1 1/4	2	12	3 1/4	1 1/4	2	Opt	.....	.....	.....	11
Nelson & LeMoon G-3	4	1 1/4	1 1/4	1 1/4	V	9	1 1/2	3 1/2	1 1/2	41 1/4	1 1/4	F	13 1/2	3 1/4	1 1/4	2	13 1/2	3 1/4	1 1/4	2	Opt	.....	.....	.....	11
Nelson & LeMoon G-4	4	1 1/4	1 1/4	1 1/4	V	9	1 1/2	3 1/2	1 1/2	41 1/4	1 1/4	F	16 1/2	3 1/4	1 1/4	2	16 1/2	3 1/4	1 1/4	2	Opt	.....	.....	.....	11
Nelson & LeMoon G-5	4	1 1/4	1 1/4	1 1/4	V	12	2	6	2	40 1/2	1 1/2	F	18	4	1 1/4	2	18	4	1 1/4	2	Opt	.....	.....	.....	11
Netco DK-2	3	1 1/4	1 1/4	1 1/4	V	12	1 1/2	16	1 1/2	40 1/2	1 1/2	F	13 1/2	3 1/4	1 1/4	4	13 1/2	3 1/4	1 1/4	4	142	94	234 1/2	34 1/2	9
Netco HL-2 1/2-3	3	1 1/4	1 1/4	1 1/4	V	13	1 1/2	16	1 1/2	41 1/4	1 1/2	F	13 1/2	3 1/4	1 1/4	4	13 1/2	3 1/4	1 1/4	4	139 1/2	93 1/2	234 1/2	34 1/2	9
Noble A-76-1 1/2	4	1 1/4	1 1/4	1 1/4	V	10	1 1/2	12 1/2	1 1/2	33 1/2	1 1/2	F	47	2 1/2	1 1/4	2	45	2 1/2	1 1/4	2	100	58	191	34	.....
Noble A-21-1 1/2	4	1 1/4	1 1/4	1 1/4	V	10	1 1/2	12 1/2	1 1/2	33 1/2	1 1/2	F	19	2	1 1/4	2	19	2	1 1/4	2	102	74	203	34	.....
Noble B-31-2	4	1 1/4	1 1/4	1 1/4	V	7	1 1/2	16 1/2	1 1/2	34 1/2	1 1/2	F	43	2	1 1/4	2	43	2	1 1/4	2	126	80	221	34	.....
Noble D-52-3	4	1 1/4	1 1/4	1 1/4	V	9	1 1/2	12	1 1/2	34 1/2	1 1/2	F	21	2 1/2	1 1/4	4	21	2 1/2	1 1/4	4	.....	101	207	34	.....
Noble E-72-4	4	1 1/4	1 1/4	1 1/4	V	14 1/2	2	16	2	34 1/2	1 1/2	F	57	2 1/2	1 1/4	2	57	2 1/2	1 1/4	2	.....	114	218	36	.....
Northway B-2-2	3	1 1/4	1 1/4	1 1/4	V	5 1/2	2 1/4	13 1/2	1 1/4	46 1/2	1 1/4	V	50 1/2	2 1/2	1 1/4	2	50 1/2	2 1/2	1 1/4	2	133	62	223 1/2	33	0
Northway B-3-3 1/2	3	1 1/4	1 1/4	1 1/4	V	5 1/2	2 1/4	13 1/2	1 1/4	46 1/2	1 1/4	V	54	2 1/2	1 1/4	2	54	2 1/2	1 1/4	2	173	92	253 1/2	34 1/2	11
Ogden A-2-1	3	1 1/4	1 1/4	1 1/4	H	12	2	6	2	44	3/4	V	11	2 1/2	1 1/4	4	11	2 1/2	1 1/4	4	108	56	186	33 1/2	10 1/2
Ogden D-1 1/2	3	1 1/4	1 1/4	1 1/4	V	13	2	12	2	44	3/4	V	10 1/2	3	1 1/4	4	10 1/2	3	1 1/4	4	120	.....	.....	.....	.....
Ogden E-2 1/2	3	1 1/4	1 1/4	1 1/4	V	10	1 1/2	14	1 1/2	30	1 1/2	F	52	2 1/2	1 1/4	1	52	2 1/2	1 1/4	1	144	.....	.....	.....	.....
Ogden F-3 1/2	3	1 1/4	1 1/4	1 1/4	V	11	1 1/2	16	1 1/2	36	1 1/2	F	15 1/2	3 1/4	1 1/4	4	15 1/2	3 1/4	1 1/4	4	168	.....	.....	.....	.....
Ogden G-5	3	1 1/4	1 1/4	1 1/4	V	9	1 1/2	18	1 1/2	40	2	F	11	6	1 1/4	2	25	4	1 1/4	4	168	.....	.....	.....	.....
Oneida B9-2	3	1 1/4	1 1/4	1 1/4	H	9 1/2	1 1/4	9 1/2	1 1/4	38 1/2	2	F	48	2 1/2	1 1/4	2	34	2 1/2	1 1/4	2	114	.....	.....	.....	.....
Oneida C9-2 1/2	3	1 1/4	1 1/4	1 1/4	H	9 1/2	1 1/4	9 1/2	1 1/4	38 1/2	2	F	58	2 1/2	1 1/4	2	43	2 1/2	1 1/4	2	138	.....	.....	.....	.....
Oneida D9-3 1/2	3	1 1/4	1 1/4	1 1/4	H	7	1 1/4	9 1/2	1 1/4	40	2	F	16	3 1/4	1 1/4	4	16	3 1/4	1 1/4	4	155 1/4	.....	.....	.....	.....
Oneida E9-5	3	1 1/4	1 1/4	1 1/4	H	7 1/2	1 1/4	9 1/2	1 1/4	40	2	F	18	4	1 1/4	4	18	4	1 1/4	4	177	.....	.....	.....	.....
Oshkosh AW-2	3	1 1/4	1 1/4	1 1/4	H	16	2	17	2	33 1/2	1 1/4	F	23 1/2	3 1/4	1 1/4	1	43 1/2	2 1/2	1 1/4	2	108	75 1/2	189	34	.....
Oshkosh AAW-2	3	1 1/4	1 1/4	1 1/4	H	16	2	17	2	33 1/2	1 1/4	F	23 1/2	3 1/4	1 1/4	1	43 1/2	2 1/2	1 1/4	2	144	110 1/2	224	34	.....
Oshkosh BO-2 1/2	4	1 1/4	1 1/4	1 1/4	V	9 1/2	1 1/4	12	1 1/2	36 1/2	2	F	23 1/2	4 1/2	1 1/4	1	43 1/2	2 1/2	1 1/4	2	125	85 1/2	211	34	.....
Oshkosh BBO2 1/2	4	1 1/4	1 1/4	1 1/4	V	9 1/2	1 1/4	12	1 1/2	36 1/2	2	F	23 1/2	4 1/2	1 1/4	1	43 1/2	2 1/2	1 1/4	2	144	104 1/2	230	34	.....
Overland 1 1/2	4	1 1/4	1 1/4	1 1/4	H	.....	.....	.....	.....	.....	.....	F	.....	.....	.....	.....	.....	.....	.....	.....	31 1/4	29	127 1/4	26	9 1/2
Patriot 7R-1	3	1 1/4	1 1/4	1 1/4	H	8	2	9	2	39	1 1/4	F	40 1/2	1 1/2	1 1/4	1	40 1/2	1 1/2	1 1/4	1	93	56	184	33 1/2	11 1/2
Patriot 9-L-2	3	1 1/4	1 1/4	1 1/4	V	6	1 1/2	8	1 1/2	37	1 1/4	F	40 1/2	1 1/2	1 1/4	1	40 1/2	1 1/2	1 1/4	1	113	65	207	34	10
Patriot 11W-3	3	1 1/4	1 1/4	1																					



## Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE										BRAKE LINING								FRAME						
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt		Service				Emergency				Length		Width			
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Selden 52	4	1 1/4	1 1/4	1 1/4	V	8 3/4	1 1/4	16 1/4	1 1/4	40 3/4	2 1/4	F	15 1/4	3 1/4	1/4	4	15 1/4	3 1/4	1/4	4	240	161	295	52	.....
Selden 53B	4	1 1/4	1 1/4	1 1/4	V	11 1/4	1 1/4	16 1/4	1 1/4	40 3/4	2 1/4	F	13 1/4	3 1/4	1/4	4	13 1/4	3 1/4	1/4	4	136	82	244	34	.....
Selden 70B	4	1 1/4	1 1/4	1 1/4	V	8 3/4	1 1/4	16 1/4	1 1/4	40 3/4	2 1/4	F	15 1/4	3 1/4	1/4	4	15 1/4	3 1/4	1/4	4	155	91	253	37 1/2	.....
Selden 73B	4	1 1/4	1 1/4	1 1/4	V	9	1 1/4	16 1/4	1 1/4	40 3/4	2 1/4	F	17 1/4	3 1/4	1/4	4	17 1/4	3 1/4	1/4	4	155	91	253	37 1/2	.....
Selden 90B	4	1 1/4	1 1/4	1 1/4	V	7	1 1/4	16 1/4	1 1/4	40 3/4	2 1/4	F	17 1/4	3 1/4	1/4	4	17 1/4	3 1/4	1/4	4	153	89	256	37 1/2	.....
Service 25-1 1/4	3	1 1/4	1 1/4	1 1/4	V	12 1/2	1 1/4	13	1 1/4	32 3/4	1 1/4	F	20	3 1/4	1/4	4	20	3 1/4	1/4	4	106 3/4	65 3/4	203 3/4	32	9 1/4
Service 33-1 1/2	4	1 1/4	1 1/4	1 1/4	V	8	1 1/4	10	1 1/4	38	3/4	V	11	3 1/4	1/4	4	11	3 1/4	1/4	4	121	76 1/2	216 1/2	34	10 1/4
Service 42-2	4	1 1/4	1 1/4	1 1/4	V	10	2	10	1 1/4	38	3/4	V	11 1/4	3 1/4	1/4	4	11 1/4	3 1/4	1/4	4	117 3/4	81 3/4	216 3/4	34	10 1/4
Service 61-3	4	1 1/4	1 1/4	1 1/4	V	10	2	10	1 1/4	38	3/4	V	13 1/4	3 1/4	1/4	4	13 1/4	3 1/4	1/4	4	127 3/4	82 3/4	226 3/4	34	10 1/4
Service 81-4	4	1 1/4	1 1/4	1 1/4	V	10	2	11 1/2	1 1/4	40 3/4	3/4	V	15 1/2	3 1/4	1/4	4	15 1/2	3 1/4	1/4	4	144	100 3/4	245 1/2	38	8 1/2
Service 103-6	4	1 1/4	1 1/4	1 1/4	V	10	2	11 1/2	1 1/4	40 3/4	3/4	V	18	4	1/4	4	18	4	1/4	4	144	100 3/4	245 1/2	38	10
Standard 75-1 1/4	3	1 1/4	1 1/4	1 1/4	V	10 1/2	2 1/4	14 3/4	1 1/4	39 1/4	1 1/4	F	11 3/4	2 1/4	1/4	4	11 3/4	2 1/4	1/4	4	108	62 1/2	198	32	9 1/4
Standard 1 1/2 K-1-1 1/2	3	1 1/4	1 1/4	1 1/4	V	10 1/2	2 1/4	14 3/4	1 1/4	39 1/4	1 1/4	F	10 3/4	2 1/4	1/4	4	10 3/4	2 1/4	1/4	4	120	72 1/2	210	32	9 1/4
Standard 2 1/2 K-2 1/2-3	3	1 1/4	1 1/4	1 1/4	V	10	1 1/4	16	1 1/4	40 3/4	1 1/4	F	13 1/4	3 1/4	1/4	4	13 1/4	3 1/4	1/4	4	132	83	220 3/4	32	12
Standard 3 1/2 K-3 1/2-5	3	1 1/4	1 1/4	1 1/4	V	10	1 1/4	16	1 1/4	41 1/2	1 1/4	F	15 1/4	3 1/4	1/4	4	15 1/4	3 1/4	1/4	4	144	93 3/4	240	38	9 1/2
Standard 5 K-5-7	3	1 1/4	1 1/4	1 1/4	V	8	1 1/4	3 1/2	1 1/4	42 3/4	1 1/4	F	17 1/4	4	1/4	4	17 1/4	4	1/4	4	144	93 3/4	244 1/2	38	9
Sterling 1 1/2	3	1 1/4	1 1/4	1 1/4	V	10	1 1/4	19	1 1/4	38	1 1/4	F	11 1/4	3 1/4	1/4	4	11 1/4	3 1/4	1/4	4	120	70	216	34	.....
Sterling 2	3	1 1/4	1 1/4	1 1/4	V	10	1 1/4	19	1 1/4	38	1 1/4	F	13 1/4	3 1/4	1/4	4	13 1/4	3 1/4	1/4	4	120	70	216	34	.....
Sterling 2 1/2	3	1 1/4	1 1/4	1 1/4	V	10	1 1/4	19	1 1/4	38	1 1/4	F	13 1/4	3 1/4	1/4	4	13 1/4	3 1/4	1/4	4	138	84	234	34	.....
Sterling 3 1/2	3	1 1/4	1 1/4	1 1/4	V	13 1/2	1 1/4	22	1 1/4	40 3/4	1 1/4	F	15 1/4	3 1/4	1/4	4	15 1/4	3 1/4	1/4	4	144	85	245	38	.....
Sterling 5-Worm	3	1 1/4	1 1/4	1 1/4	V	10	1 1/4	19	1 1/4	40 3/4	1 1/4	F	17 1/4	4	1/4	4	17 1/4	4	1/4	4	158	91	259	38	.....
Sterling 5-Chain E.H.D.	3	1 1/4	1 1/4	1 1/4	V	10	1 1/4	19	1 1/4	40 3/4	1 1/4	F	56 1/4	3 1/4	1/4	2	29 1/4	4	1/4	1	158	97	259	38	.....
Sterling 5-Ch. E.L.D.	3	1 1/4	1 1/4	1 1/4	V	13 1/2	1 1/4	22	1 1/4	40 3/4	1 1/4	F	56 1/4	3 1/4	1/4	2	29 1/4	4	1/4	1	158	97	259	38	.....
Sterling 7 1/2	3	1 1/4	1 1/4	1 1/4	V	10	1 1/4	19	1 1/4	40 3/4	1 1/4	F	56 1/4	3 1/4	1/4	2	29 1/4	4	1/4	1	158	97	259	38	.....
Stewart M15-1 1/4	3	1 1/4	1 1/4	1 1/4	V	10 1/2	2 1/4	14 3/4	1 1/4	39 1/4	1 1/4	F	41 3/4	2 1/4	1/4	2	22 3/4	2	1/4	1	99 1/2	.....	.....	38	.....
Stewart M9-1 1/2	3	1 1/4	1 1/4	1 1/4	V	10 1/2	2 1/4	14 3/4	1 1/4	37 1/2	1 1/4	F	48 1/4	2 1/4	1/4	2	22 3/4	2	1/4	1	119 1/2	.....	.....	32	.....
Stewart M7X	3	1 1/4	1 1/4	1 1/4	V	10 1/2	2 1/4	14 3/4	1 1/4	37 1/2	1 1/4	F	50 3/4	2 1/4	1/4	2	22 3/4	2	1/4	1	132 1/2	.....	.....	32	.....
Stewart M10X	3	1 1/4	1 1/4	1 1/4	V	10 1/2	2 1/4	14 3/4	1 1/4	37 1/2	1 1/4	F	60	2 1/4	1/4	2	22 3/4	2	1/4	1	138	.....	.....	32	.....
Super Truck 50	3	1 1/4	1 1/4	1 1/4	V	18 1/2	1 1/4	19	1 1/4	37 1/2	1 1/4	F	51 1/4	2 1/4	1/4	2	51 1/4	1 1/4	1/4	2	135	84	243	36	9 1/4
Super Truck 70	3	1 1/4	1 1/4	1 1/4	V	18 1/2	1 1/4	19	1 1/4	37 1/2	1 1/4	F	55 1/4	2 1/4	1/4	2	55 1/4	2 1/4	1/4	2	144	97 1/2	249	34	10 1/4
Super Truck 100	3	1 1/4	1 1/4	1 1/4	V	6	1 1/4	10	1 1/4	42	1 1/4	F	68	3	1/4	2	51 1/4	3	1/4	2	144	97 1/2	249	34	10
Traffic C-4000	3	1 1/4	1 1/4	1 1/4	H	10 1/2	2 1/4	10 1/2	2 1/4	41 1/4	1 1/4	F	43 1/4	2 1/4	1/4	2	38	1 1/4	1/4	2	120 3/4	67 3/4	213 3/4	42	10 1/4
Traffic 6000	3	1 1/4	1 1/4	1 1/4	H	10 1/2	2 1/4	10 1/2	2 1/4	41 1/4	1 1/4	F	52 3/4	2 1/4	1/4	2	47	2	1/4	2	120 3/4	69 3/4	213 3/4	42	11 1/4
Traffic Speedboy	3	1 1/4	1 1/4	1 1/4	H	10 1/2	2 1/4	10 1/2	2 1/4	41 1/4	1 1/4	F	43 1/4	2 1/4	1/4	2	38	1 1/4	1/4	2	86	53 1/2	174	34	11 1/4
Transport 15-1	3	1 1/4	1 1/4	1 1/4	H	10 1/2	2 1/4	13	2	40 3/4	1 1/4	F	48	2 1/4	1/4	2	46 1/4	1 1/2	1/4	2	98 1/2	57 1/2	188	34	10
Transport 26-1 1/2	4	1 1/4	1 1/4	1 1/4	V	9 1/4	2	13	1 1/4	34 3/4	1 1/4	F	48 1/4	2 1/4	1/4	2	46 1/4	1 1/2	1/4	2	113 1/4	70 1/4	201	34	10
Transport 36-2	4	1 1/4	1 1/4	1 1/4	V	10 1/2	2 1/4	16	1 1/4	33 1/2	2	F	10 1/4	2 1/4	1/4	2	46 1/4	1 1/2	1/4	2	120 3/4	72 1/4	210	34	11
Transport 61-3 1/2	4	1 1/4	1 1/4	1 1/4	V	9 1/4	2	16	1 1/4	33 1/2	2	F	11 1/4	3	1/4	4	48 1/4	2 1/2	1/4	2	127 3/4	78 1/4	218	34	11
Transport 75-5	4	1 1/4	1 1/4	1 1/4	V	12	2	16	1 1/4	35 1/2	2	F	11 1/4	3	1/4	4	58	2 1/2	1/4	2	150 3/4	93 3/4	251 1/2	36 1/2	10 1/2
Traylor B	4	1 1/4	1 1/4	1 1/4	V	10	2	6	1 1/4	38	1	F	50	2	1/4	2	50	2	1/4	2	117	75	204 1/4	34	10
Traylor C	4	1 1/4	1 1/4	1 1/4	V	12	2	12	1 1/4	36	2	F	50	2	1/4	2	50	2	1/4	2	122	73 1/4	218 1/4	34	10 1/4
Traylor D	4	1 1/4	1 1/4	1 1/4	V	12	2	12	1 1/4	36	2	F	56 1/4	2 1/4	1/4	2	56 1/4	2 1/4	1/4	2	142	76	241 1/4	34	9 1/4
Traylor F	4	1 1/4	1 1/4	1 1/4	V	14	2	14	1 1/4	37	2	F	59	2 1/4	1/4	2	59	2 1/4	1/4	2	165	92 1/4	273 1/4	35	11
Triangle AA-1	3	1 1/4	1 1/4	1 1/4	H	17	2	17	2	34	1	F	22 1/4	1 1/4	1/4	1	48	2 1/2	1/4	2	94	53	177	35	10
Triangle A-2	4	1 1/4	1 1/4	1 1/4	V	14	1 1/4	14 1/2	1 1/4																

## Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE												BRAKE LINING				FRAME								
	Piston Rings		Carburetor		Upper Hose		Lower Hose		Fan Belt		Service				Emergency				Length			Width			
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	★ Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
White 20-2.....	3	1 1/4	1 1/4	1 1/4	V	7 1/4	1	7 1/4	1 1/4	38	1 1/4	F	55 1/2	3 1/2	1 1/4	2	50 1/8	3 1/2	1 1/4	2	140	92 1/2	239 1/2	34	9 1/2
White 20-D-2.....	3	1 1/4	1 1/4	1 1/4	V	7 1/4	1	7 1/4	1 1/4	38	1 1/4	F	55 1/2	3 1/2	1 1/4	2	50 1/8	3 1/2	1 1/4	2	98	70	191 1/2	34	9 1/2
White 20-45-2.....	3	1 1/4	1 1/4	1 1/4	V	13 1/2	1 1/2	12	1 1/2	40 3/8	2	F	11 3/8	4	1 1/4	4	50 1/8	3 1/2	1 1/4	2	107 1/2	82	214 1/2	34	9 1/2
White 50A-Bus.....	3	1 1/4	1 1/4	1 1/4	V	13 1/2	1 1/2	12	1 1/2	45 3/8	2	F	11 3/8	4	1 1/4	4	50 1/8	3 1/2	1 1/4	2	168	112	274 1/2	74*	10 1/2
White 40-3 1/2.....	3	1 1/4	1 1/4	1 1/4	V	13 1/2	1 1/2	12	1 1/2	45 3/8	2	F	11 3/8	4	1 1/4	4	25 3/8	5	1 1/4	4	164	106 1/2	267 1/2	42 1/2	10 1/2
White 40-D-3 1/2.....	3	1 1/4	1 1/4	1 1/4	V	13 1/2	1 1/2	12	1 1/2	45 3/8	2	F	11 3/8	4	1 1/4	4	25 3/8	5	1 1/4	4	118	88 1/2	222 1/2	42 1/2	10 1/2
White 45-5.....	3	1 1/4	1 1/4	1 1/4	V	13 1/2	1 1/2	12	1 1/2	45 3/8	2	F	11 3/8	5	1 1/4	4	25 3/8	5	1 1/4	4	164	106 1/2	267 1/2	42 1/2	10 1/2
White 45-D-5.....	3	1 1/4	1 1/4	1 1/4	V	13 1/2	1 1/2	12	1 1/2	45 3/8	2	F	11 3/8	5	1 1/4	4	25 3/8	5	1 1/4	4	119	88 1/2	222 1/2	42 1/2	10 1/2
Wilcox AA-1.....	3	1 1/4	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	47 1/2	2 1/2	1 1/4	2	33 1/4	2 1/2	1 1/4	2	96	.....	.....	34	.....
Wilcox B-1 1/2.....	3	1 1/4	1 1/4	.....	.....	.....	.....	.....	.....	.....	.....	.....	47 1/2	2 1/2	1 1/4	2	33 1/4	2 1/2	1 1/4	2	132	.....	.....	33	.....
Wilcox C-2 1/2.....	3	1 1/4	1 1/4	.....	.....	.....	.....	.....	.....	.....	.....	.....	57 1/2	2 1/2	1 1/4	2	42 1/2	2 1/2	1 1/4	2	141	.....	.....	33	.....
Wilcox E-3 1/2.....	3	1 1/4	1 1/4	.....	.....	.....	.....	.....	.....	.....	.....	.....	57 1/2	2 1/2	1 1/4	2	42 1/2	2 1/2	1 1/4	2	156	.....	.....	33	.....
Wilcox F-5.....	3	1 1/4	1 1/4	.....	.....	.....	.....	.....	.....	.....	.....	.....	69 3/8	3 1/2	1 1/4	2	52	3 1/2	1 1/4	2	148 1/2	.....	.....	36	.....
Witt-Will P-2.....	3	1 1/4	1 1/4	V	.....	8	1 1/2	12	1 1/4	31	1 1/4	F	48	3 1/4	1 1/4	4	48	3 1/4	1 1/4	4	.....	78	223	32	10
Witt-Will SS-3.....	3	1 1/4	1 1/4	V	.....	8	1 1/2	12	1 1/4	31	1 1/4	F	52	3 1/2	1 1/4	4	52	3 1/2	1 1/4	4	156	108	242	32	10
Witt-Will N-1 1/2.....	3	1 1/4	1 1/4	V	.....	8	1 1/2	12	1 1/4	31	1 1/4	F	48	3 1/4	1 1/4	4	48	3 1/4	1 1/4	4	137	78	226	32	10
Witt-Will S-2 1/2.....	3	1 1/4	1 1/4	V	.....	8	1 1/2	12	1 1/4	31	1 1/2	F	52	3 1/2	1 1/4	4	52	3 1/2	1 1/4	4	137	78	226	32	10
Yellow Cab M22.....	3	1 1/4	1	1 1/2	V	8 1/4	2	10 1/4	2	38 1/2	3/4	V	49	2 1/2	1 1/4	2	45	2 1/2	1 1/4	2	60	.....	.....	43	.....
Yellow Cab M42-1 1/4.....	3	1 1/4	1	1 1/2	V	8 1/4	2	10 1/2	2	38 1/2	3/4	V	21 3/4	3	1 1/4	4	11	3	1 1/4	2	92	.....	.....	32	.....
Yellow Cab Express T1.....	3	1 1/4	1	1 1/2	V	9 1/2	2	9 1/2	2	39 1/4	3/4	V	21 3/4	3 1/2	1 1/4	4	11 1/2	2 1/2	1 1/4	2	94 1/2	61 1/4	181 1/2	34 1/2	.....

## Selling Motor Trucks in the Small Town

This Dealer is Making Money Selling Trucks. Low Overhead and Common Sense Business Tactics Necessary

OPENING up a dealer business in a small town is a vastly different proposition from starting in a big city. For the first twelve months at least, the truck sales are not likely to be numerically large. The fewer sales the greater the cost per truck of selling them. For that reason in embarking as small town dealers two years ago Meyers Motor Mart of Danville, Illinois, decided they must eliminate overhead as far as possible. At the same time they recognized that they would have to give service, which meant adequate premises and equipment.

In commencing business as International truck dealers, they also introduced other lines of business which would care for the overhead while the truck business was developing. They leased their present premises which have an unbroken floor space of 84 ft. x 150 ft. as well as office accommodation and window space. On the floor they stored cars and trucks and serviced them when required. They fitted up repair benches and battery servicing equipment and in their show windows displayed trucks, farm equipment and tractors.

The storage alone paid most of the expenses, so that the two partners were free to concentrate on truck sales and service.

In the first year they sold fifteen new trucks and fourteen used ones which had been taken in trade. On the used vehicles they also made a profit—a small one it is true, but nevertheless a net profit. The fact that they did not have to sell a truck to stay in business, made it possible

for them to preserve their profits. Their quota to begin with naturally was small and they felt it was more common sense business to sell that quota at a profit than to make a bigger turnover and lose their money. From the start they have operated on the principle of selling the prospect on their product before even considering the question of trades. As an example of this, a prospect came in a short time ago with a trade proposition. He said that another concern had offered him a \$550 allowance; what would Meyers do?

What they did was to spend some time on this man's education. They dismissed the question of allowance and concentrated on selling him on the superiority of the International. When they got him to the dotted line stage they pointed out that their business was selling trucks, **not buying them** and that he was buying something from them which would be an investment, whereas he was selling them something which was valueless from their standpoint. In the end they sold him a new International and allowed him \$320 only—\$230 less than the other concern offered him. Naturally it sometimes happens that a deal is lost because they cannot agree on a trade-in figure, but then they have **no accumulating stock of used trucks** occupying valuable space in the garage.

During the second year of business, Meyers Motor Mart just doubled their truck sales, so that the trucks now form over 60 per cent of their business and sales are rapidly growing.

As a rule they find it somewhat easier

to sell a light truck than they do the heavier models. Each class of buyers has its special characteristics. The buyer of the big truck, they find, offers more sales resistance because of the greater capital involved and the necessity for what might be termed more refined sales arguments. The big truck buyer in other words is not content with generalizations and broad statements. He must have details and figures. The light truck prospect on the other hand talks along the lines of speed and capacity and first cost is usually uppermost in his mind. On the other hand he is usually appreciative of the advertising value of the truck. Incidentally when the Meyers Co. can secure some of the new 3/4 ton Internationals which are to sell at \$675 they anticipate a big increase in their light truck sales. So far the proportion of light to heavy duty trucks sold has been about 150 per cent.

In a scattered district such as Danville and environs there is plenty of scope for effective advertising. Meyers has been devoting about four per cent of his gross to this, using newspaper displays and posters.

Their latest venture in advertising is the lease of 10 ft. x 40 ft. signs on each of the main highways to the city. These will carry permanent advertisements for 3 years, towards the cost of which the truck manufacturers will make a contribution.

Meyers Motor Mart's motto may perhaps be said to be "Stay in business by sticking to your profits—Extend your business by advertising."



# Manufacturers and Models Included in the Specification Tables

List Includes Manufacturers of Buses and Electric Trucks

Trade Name	Capacity	Name	Address	How Manufacturer Sells				
				Nation-ally	Locally	Branches	Distribu-tors	Dealers
Ace	2½-Bus	American Motor Truck Co.	Newark, Ohio	.....	Yes	.....	.....	.....
Acme	1, 1½, 2, 2½, 3, 4, 5, 6½-Bus	Acme Motor Truck Co.	Cadillac, Mich.	Yes	No	No	Yes	Yes
Acorn	2½, 4	Acorn Motor Truck Co.	Chicago, Ill.	No	Yes	No	No	No
American-La France	2½, 3½, 5, 6, 7-T. T.	American-La France Fire Engine Co.	Elmira, N. Y.	Yes	.....	Yes	No	Yes
Armleder	1½, 2½, 3½ T. T.	O. Armleder Motor Truck Co.	Cincinnati, Ohio	Yes	.....	1-N. Y. State only	.....	.....
Atterbury Autocar	1½, 2½, 3½, 5, 1, 1½, 1½, 2, 2½, 3, 5, T. T.	Atterbury Motor Car Co. Autocar Co.	Buffalo, N. Y. Ardmore, Pa.	Yes Yes	No .....	No Yes	Yes .....	Yes Yes
Available	1½, 2, 2½, 3½, 5	Available Truck Co.	Chicago, Ill.	No	Yes	No	.....	.....
Bessemer	1, 1½, 2½	Bessemer Motor Truck Co.	Plainfield, N. J.	.....	.....	.....	.....	.....
Bethlehem	1, 2, 2½, 3½	Bethlehem Motors Corp.	Allentown, Pa.	.....	.....	.....	.....	.....
Betz	1, 2½	Betz Motor Truck Co.	Hammond, Ind.	No	Yes	.....	No	No
Bridgeport	1½, 2½, 4-Bus	Bridgeport Motor Truck Corp.	Stratford, Conn.	Yes	Yes	Yes	Yes	Yes
Brinton	1½, 2½	Brinton Motor Truck Co.	Philadelphia, Pa.	.....	.....	.....	.....	.....
Brockway	1, 1½, 2, 2½, 3, 3½, 4, 5-Bus	Brockway Motor Truck Corp.	Cortland, N. Y.	Yes	.....	Yes	Yes	Yes
C. T. Elec.	½, ¾, 1, 2, 3, 3½, 5	Commercial Truck Co.	Philadelphia, Pa.	Yes	No	Yes	Yes	Yes
Casco	1	Casco Motors, Inc.	Sanford, Me.	.....	.....	.....	.....	.....
Chevrolet	¾, 1	Chevrolet Motor Co.	Detroit, Mich.	.....	.....	.....	.....	.....
Clinton	1½, 2, 3, 4, 5 to 7-Bus	Clinton Motors Corp.	Reading, Pa.	.....	.....	.....	.....	.....
Clydesdale	1½, 2½, 3½, 5, 7	Clydesdale Motor Truck Co.	Clyde, Ohio.	Yes	No	No	Yes	Yes
Columbia	1½, 2½, 3	Columbia Motor Truck Co.	Pontiac, Mich.	.....	.....	.....	.....	.....
Commerce	1, 1½, 2, 2½-Bus	Commerce Motor Truck Co.	Ypsilanti, Mich.	Yes	No	No	Yes	Yes
Concord	1, 1½, 2, 2½, 3	Abbott-Downing Truck & Body Company	Concord, N. H.	.....	.....	.....	.....	.....
Corbitt	1, 1½, 2, 2½, 3, 4, 5	Corbitt Motor Truck Co.	Henderson, N. C.	Yes	.....	.....	Yes	Yes
Day-Elder	1½, 2, 2½, 3, 4, 5, Bus.	Day-Elder Motors Corp.	Newark, N. J.	Yes	.....	.....	Yes	Yes
Defiance	1½	Century Motor Truck Co.	Defiance, Ohio	Yes	No	Yes	Yes	Yes
Diamond T	1, 1½, 1½, 2½, 3½, 5	Diamond T Motor Car Co.	Chicago, Ill.	Yes	No	Yes	Yes	Yes
Dixon	1½, 2, 2½, 3½, 5	Dixon Motor Truck Co.	Altoona, Pa.	.....	Yes	.....	.....	.....
Dodge Brothers	¾, 1	Dodge Brothers, Inc.	Detroit, Mich.	.....	.....	.....	.....	.....
Dorris	1, 2½, 3½	Dorris Motor Car Co.	St. Louis, Mo.	.....	.....	.....	.....	.....
Double Drive	3	Double Drive Truck Co.	Benton Harbor, Mich.	.....	.....	.....	.....	.....
Duplex	1, 1½, 2, 2½, 3½-Bus	Duplex Truck Co.	Lansing, Mich.	Yes	.....	No	.....	Yes
Eagle	1½, 2	Eagle Motor Truck Corp.	St. Louis, Mo.	.....	.....	.....	.....	.....
F. W. D.	3	Four-Wheel Drive Auto Co.	Clintonville, Wis.	Yes	.....	Yes	.....	Yes
Fageol	2, 3, 4, 6-Bus	Fageol Motors Co.	Oakland, Cal.	Yes	No	.....	.....	.....
Federal	1, 1½, 1½, 2, 2½, 4, 5-Bus, T. T.	Federal Motor Truck Co.	Detroit, Mich.	.....	.....	.....	.....	.....
Fifth Avenue	Bus	Fifth Avenue Coach Co.	New York City.	.....	.....	.....	.....	.....
Ford	1	Ford Motor Co.	Highland Park, Mich.	Yes	No	Yes	No	Yes
Front Drive	1½	Double Drive Truck Co.	Benton Harbor, Mich.	.....	.....	.....	.....	.....
Fulton	1, 2	Fulton Motors Corp.	Farmingdale, N. Y.	.....	.....	.....	.....	.....
G. M. C.	1, 2½, 3½, 5-T. T.	General Motors Truck Co.	Pontiac, Mich.	Yes	No	Yes	Yes	Yes
G. W. W.	1½, 2	Wilson Truck Mfg. Co.	Henderson, Iowa	.....	.....	.....	.....	.....
Garford	1, 1½, 4, 5, 7½-Bus	Garford Motor Truck Co.	Lima, Ohio	.....	.....	.....	.....	.....
Gary	1, 2, 2½, 3, 3½, 5	Gary Motor Corp.	Gary, Ind.	.....	.....	.....	.....	.....
Gotfredson	1, 1½, 2, 3, 4, 5	Gotfredson Truck Corp.	Detroit, Mich. & Walkerville, Ont.	Yes	.....	Yes	Yes	.....
Graham	1, 1½-Bus	Graham Brothers	Detroit, Mich.	.....	.....	.....	.....	.....
Gramm-Bernstein	1, 1½, 1½, 2, 2½, 3, 3½, 4, 5, 6	Gramm-Bernstein Motor Truck Co.	Lima, Ohio	.....	.....	.....	.....	.....
Grass Premier	1, 1½, 2, 2½, 3½	Grass Premier Truck Co.	Sauk City, Wis.	No	Yes	No	No	No
Gullder	1½, 1½, 2, 3, 4, 5, 6-Bus	Gullder Engineering Co.	Poughkeepsie, N. Y.	.....	.....	.....	.....	.....
Hahn	1½, 1½, 2, 2½, 3, 5	Hahn Motor Truck Co.	Hamburg, Pa.	Yes	Yes	.....	.....	.....
Harvey	2½, 3½, 7, 10-T. T.	Harvey Motor Truck Co.	Harvey, Ill.	No	Yes	Yes	No	No
Hawkeye	1½, 2½, 3½	Hawkeye Truck Co.	Sioux City, Iowa	.....	.....	.....	.....	.....
Hug	1½, 2, 2½	Hug Company	Highland, Ill.	Yes	.....	.....	Yes	.....
Independent	1, 1½, 2½	Independent Motor Truck Co., Inc.	Davenport, Ia.	.....	.....	.....	.....	.....
Indiana	1, 1½, 2, 2½, 3½, 5	Indiana Truck Corp.	Marion, Ind.	Yes	Yes	Yes	Yes	Yes
International	1, 1½, 2, 3, 5-Bus	International Harvester Co. of America	Chicago, Ill.	.....	.....	.....	.....	.....
Kankakee	2½	Kankakee Motor Truck Co.	Kankakee, Ill.	No	Yes	No	No	No
Kelland (Elec.)	¾, ¾, 1	Kelland Motor Car Co.	Newark, N. J.	Yes	No	Yes	Yes	Yes
Kelly-Springfield	1½, 2, 2½, 3½-5-7	Kelly-Springfield Motor Truck Co.	Springfield, Ohio	.....	.....	.....	.....	.....

Trade Name	Capacity	Name	Address	How Manufacturer Sells				
				Nation-ally	Locally	Branches	Distribu-tors	Dealers
Kenworth	1½, 3, 3½	Kenworth Motor Truck Corp.	Seattle, Wash.	No	Yes	No	.....	Yes
Kimball	2, 2½, 4, 5	Kimball Motors Corp.	Los Angeles, Cal.	.....	.....	.....	.....	.....
King Zeitler	1, 1½, 2½, 3½, 5	King Zeitler Co.	Chicago, Ill.	.....	.....	.....	.....	.....
Kissel	1, 1½, 2½, 4-Bus	Kissel Motor Car Co.	Hartford, Wis.	Yes	.....	No	Yes	Yes
Kleiber	1½, 2½, 3½, 5	Kleiber Motor Truck Co.	San Francisco, Cal.	.....	.....	.....	.....	.....
Krebs	1½, 2½, 3½, 5	Krebs Motor Truck Co.	Bellevue, Ohio	Yes	No	No	Yes	Yes
Lange	1½, 2½, 3½	Lange Motor Truck Co.	Pittsburgh, Pa.	.....	.....	.....	.....	.....
Lansden (Elec.)	¾, 1, 2, 3½, 5, 6	Lansden Company	Danbury, Conn.	Yes	.....	1-N. Y. State only	Yes	Yes
Larrabee-Deyo	1½, 1½, 2½, 3½-Bus	Larrabee-Deyo Motor Truck Co., Inc.	Binghamton, N. Y.	.....	.....	.....	.....	.....
Luedinghaus	1, 1½, 2½, 3½, 5	Luedinghaus-Espenschied Wagon Co.	St. Louis, Mo.	.....	.....	.....	.....	.....
Maccar	1½, 2, 3, 4, 5	Maccar Truck Co.	Scranton, Pa.	No	Yes	4	Yes	Yes
Mack	1½, 2, 2½, 3½, 5, 6½, 7½-Bus	International Motor Co.	New York, N. Y.	Yes	.....	86	.....	Yes
Mason Road King	1½-Bus	Mason Motor Truck Co.	Flint, Mich.	Yes	.....	Yes	Yes	Yes
Master	1½, 1½, 2½, 3½, 5, 5½-Bus	Master Motor Truck Mfg. Co.	Chicago, Ill.	.....	.....	.....	.....	.....
Menominee	1, 1½, 1½, 2½, 3½, 5-Bus	Menominee Motor Truck Co.	Clintonville, Wis.	.....	.....	.....	.....	.....
Moreland	1, 1½, 2, 3, 5	Moreland Motor Truck Co.	Burbank, Cal.	.....	.....	.....	.....	.....
Nash	1, 2, 2½	Nash Motors Co.	Kenosha, Wis.	Yes	No	No	Yes	Yes
National	2, 3, 3½, 4	National Steel Car Corp., Ltd.	Hamilton, Ont., Canada	Yes	No	2	No	Yes
Nelson-LeMoon	1, 1½, 2, 2½, 3½, 5	Nelson & Le Moon	Chicago, Ill.	.....	.....	.....	.....	.....
Netco	2½, 3, 4	New England Truck Co.	Fitchburg, Mass.	.....	.....	.....	.....	.....
Noble	1, 1½, 2, 2½, 3, 3½, 4	Noble Motor Truck Co.	Kendallville, Ind.	No	No	No	Yes	Yes
Northway	1½, 3, 5	Northway Motors Corp.	Natick, Mass.	.....	.....	.....	.....	.....
O. B. (Elec.)	2, 3½, 5	O. B. Electric Vehicles, Inc.	Long Island City, N. Y.	.....	.....	.....	.....	.....
O. K.	1, 1½, 2, 2½, 3½	Nolan Truck Co.	Okay, Okla.	.....	.....	.....	.....	.....
Ogden	1, 1½, 2½, 3½, 5	Ogden Truck Co.	Chicago, Ill.	.....	.....	.....	.....	.....
Oneida	2, 2½, 3½, 5	Oneida Manufacturing Co.	Green Bay, Wis.	.....	.....	.....	.....	.....
Oshkosh	2, 2½, 4	Oshkosh Motor Truck Mfg. Co.	Oshkosh, Wis.	.....	Yes	No	.....	Yes
Overland	½	Willys-Overland Co.	Toledo, Ohio	Yes	Yes	24	Yes	Yes
Patriot	1, 2, 3	Patriot Mfg. Co.	Havelock, Neb.	Yes	No	No	Yes	Yes
Penn	1, 2	Penn Motors Corp.	Philadelphia, Pa.	.....	.....	.....	.....	.....
Pierce-Arrow	2, 3, 4, 5, 6, 7½	Pierce-Arrow Motor Car Co.	Buffalo, N. Y.	Yes	No	.....	Yes	Yes
Pioneer	1	Pioneer Truck Co.	Chicago, Ill.	.....	.....	.....	.....	.....
Power	1½, 2½, 3½	Power Truck & Tractor Co.	St. Louis, Mo.	.....	.....	.....	.....	.....
Rainier	¾, 1, 1½, 2, 2½, 3½, 5, 6	Rainier Trucks, Inc.	Long Island City, N. Y.	No	Yes	No	Yes	Yes
Red Ball	3	Red Ball Transit Co.	Indianapolis, Ind.	.....	.....	.....	.....	.....
Reo	1½-Bus	Reo Motor Car Co.	Lansing, Mich.	.....	.....	.....	.....	.....
Republic	1½, 1½, 2, 3, 4½-Bus	Republic Motor Truck Co., Inc.	Alma, Mich.	Yes	No	No	Yes	Yes
Rowe	2½, 3, 4, 5	Rowe Motor Mfg. Co.	Lancaster, Pa.	.....	.....	.....	.....	.....
Ruggles	¾, 1½, 1½, 2, 2½, 3	Ruggles Motor Truck Co.	Saginaw, Mich.	.....	.....	.....	.....	.....
Rumely	1½	Advance Rumely Thresher Co.	Laporte, Ind.	Yes	No	30	Yes	Yes
Safeway Six	Bus	The Six Wheel Co.	Philadelphia, Pa.	Yes	.....	.....	.....	.....
Wheeler	1, 1½, 2, 2½, 3½, 5	Sandow Motor Truck Co.	Chicago Heights, Ill.	Yes	No	.....	.....	.....
Sandow	5	.....	.....	.....	.....	.....	.....	.....
Sanford	1, 1½, 2½, 3½, 5	Sanford Motor Co.	Syracuse, N. Y.	Yes	.....	.....	Yes	.....
Saurer	6½, T. T.	Adolph Saurer, Inc.	New York, N. Y.	.....	Yes	Yes	No	Yes
Schacht	1½, 2, 2½, 3, 4, 5-Bus	G. A. Schacht Motor Truck Co.	Cincinnati, Ohio	Yes	.....	Yes	.....	Yes
Selden	1½, 1½, 2½, 3, 3½, 5-Bus	Selden Truck Corp.	Rochester, N. Y.	Yes	No	Yes	Yes	Yes
Service	1, 1½, 2½, 3½, 5	Service Motors, Inc.	Wabash, Ind.	Yes	.....	Yes	Yes	Yes
Standard	1½, 1½, 2½, 3½, 5, 6	Standard Motor Truck Co.	Detroit, Mich.	Yes	No	No	Yes	Yes
Steinmetz (Elec.)	5, 6	Steinmetz Electric Motor Car Corp.	Arlington, Balti-more, Md.	Yes	.....	.....	Yes	Yes
Sterling	1½, 2, 2½, 3½, 5, 7½-Bus	Sterling Motor Truck Co.	Milwaukee, Wis.	Yes	.....	Yes	Yes	Yes
Stewart	1, 1½, 2½-3, 3½-4	Stewart Motor Corp.	Buffalo, N. Y.	Yes	.....	Yes	Yes	Yes
Stoughton	1½, 1½, 2, 3, 2½, 3½, 5	Stoughton Wagon Co.	Stoughton, Wis.	.....	.....	.....	.....	.....
Super Truck	2½, 3½, 5	O'Connell Motor Truck Co.	Waukegan, Ill.	No	Yes	No	No	No
Traffic	1½, 2, 3	Traffic Motor Truck Corp.	St. Louis, Mo.	.....	.....	.....	.....	.....
Transport	1, 1½, 2, 3½, 5	Transport Truck Co.	Mt. Pleasant, Mich.	.....	.....	.....	.....	.....
Traylor	1½, 2, 3, 5	Traylor Eng. & Mfg. Co.	Allentown, Pa.	.....	.....	.....	.....	.....
Triangle	1, 1½, 2, 2½	Triangle Motor Truck Co.	St. Johns, Mich.	.....	.....	.....	.....	.....
Twin City	2½, 3, 3½	Minneapolis Steel & Machinery Co.	Minneapolis, Minn.	Yes	No	Yes	Yes	Yes
U. S.	1½, 1½, 2½, 3, 4, 5-7	United States Motor Truck Co.	Cincinnati, Ohio	.....	.....	.....	.....	.....
Union	1½, 2½, 4, 6-Bus	Union Motor Truck Co.	Bay City, Mich.	Yes	Yes	.....	.....	Yes
United	1, 1½, 2, 2½, 3, 3½	United Motor Products Co.	Grand Rapids, Mich.	Yes	.....	Yes	Yes	Yes
Victor	1½, 1½, 2, 2½, 3½, 5, 6	Victor Motors, Inc.	St. Louis, Mo.	.....	.....	.....	.....	.....
Wachusett	1, 1½, 2, 2½	Wachusett Motors, Inc.	Fitchburg, Mass.	.....	Yes	.....	.....	.....
Walker (Elec.)	½, ¾, 1, 2, 3½, 5	Walker Vehicle Co.	Chicago, Ill.	.....	.....	.....	.....	.....
Walker Johnson	1½, 2½, 3	Walker Johnson Truck Co.	Woburn, Mass.	.....	.....	.....	.....	.....
Walter (Elec.)	T. T.	Walter Motor Truck Co.	Long Island City, N. Y.	Yes	Yes	.....	Yes	.....
Ward (Elec.)	750 lbs. to 7 ton	Ward Motor Vehicle Co.	Mt. Vernon, N. Y.	Yes	.....	Yes	Yes	Yes
Ward La France	2½, 3½, 5, 7-Bus	Ward La France Truck Corp.	Elmira, N. Y.	Yes	No	Yes	.....	Yes
White	¾, 2, 3½, 5-Bus	White Co.	Cleveland, Ohio	.....	.....	.....	.....	.....
Wilcox	1, 1½, 2½, 3½, 5	Wilcox Trux, Inc.	Minneapolis, Minn.	.....	.....	.....	.....	.....
Winther	1½, 2½, 3, 3½, 5, 7	Winther Motor Co.	Kenosha, Wis.	.....	.....	.....	.....	.....
Witt Will	1½, 2, 2½, 3, 4, 5	Witt Will Co., Inc.	Washington, D. C.	No	Yes	No	No	No
Yellow Cab	¾, 1-Bus	Yellow Cab Mfg. Co.	Chicago, Ill.	.....	.....	.....	.....	.....



## New Six Cylinder Continental Bus Engine

Continental displayed its new  $4\frac{1}{2} \times 5\frac{3}{4}$  in. six cylinder engine which is designed particularly for the bus field. Among the features of the new power plant are the extensive provisions that have been made driving accessory equipment, pressure lubrication of the wrist pins, a new design of oil filter and a seven bearing crankshaft with Lanchester vibration dampener.

The cylinder block and detachable head are gray iron castings, and the crankcase, oil pan and flywheel housing are of aluminum. The upper halves of the main bearings are of the bronzed backed, babbitt lined type and the lower halves are cast in the caps. The connecting big ends have spun babbitt bearings and bronze bushings at the pin ends. Pistons are of Lynite and have the piston pins locked in them.

The front end drive consists of a train of six helical gears all of which are steel except the air compressor gear which is of Textolite. The air compressor gear is driven by the camshaft gear which in turn meshes with the pinion on the crankshaft. This pinion also drives an idler gear which meshes with the magneto and water pump drive gears.

Provision is made for mounting the starting motor, air compressor and gasoline pump on the right side of the engine, and the water pump, magneto and generator on the left side. Battery ignition may be used if desired as a mounting has been provided for a distributor on the top of the cylinder block, the drive being taken through a vertical shaft driven by helical gears from the camshaft. The same pair of gears also drives the oil pump, which is located in the crankcase. The gasoline pump is driven from the oil pump shaft.

On leaving the oil pump, the oil is conducted through a tube to a large filter consisting of a number of concentric wire screens contained in a cast housing mounted on the left side of the crankcase at the rear. After being filtered it is distributed to each main bearing and thence through the drilled crankshaft to the connecting rod bearings. The wrist pins are supplied through ducts drilled in the rods. The timing gears are also positively lubricated.

The method of preheating the air is a novel feature of the carburetion system. There is a longitudinal chamber extending along the left side of the block at the base of the cylinders. The air enters this chamber at the front and travels to the

back of the engine from which point it is carried around to the carburetor by an external pipe.

The engine is arranged for four-point support and the flywheel housing takes a No. 1 S. A. E. bell housing.

## Porter Angular Clipper

Although not new, the Porter Bolt Clipper, manufactured by H. K. Porter, Inc., has been re-designed to meet a specific need as the illustration depicts.

The cutting jaws on this tool are formed at an angle of thirty degrees to the handles so that when the jaws are set flat on a level surface, the handles come up at a thirty degree angle. This cutter is a compromise between the side and end cut type of cutters. In the original side type cutters, the tool is at right angles to the bolt to be cut; in the end



Clipping an Inaccessible Bolt

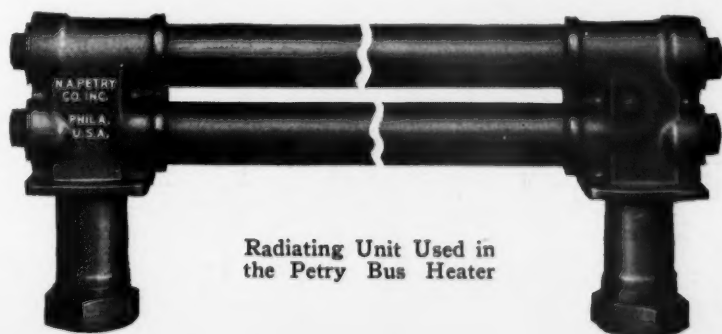
type the handles of the tool are at right angles to the bolt.

The compromise between these two types makes it possible to get at bolts that otherwise would be inaccessible.

## Petry Bus Heater

The new Unit Bus Heater put out by the N. A. Petry Co., Inc., Philadelphia, Pa., is made in two sizes of tubing,  $1\frac{1}{2}$  in. and 2 in., in both the vertical and horizontal types, and in standard lengths of 5 ft. to 9 ft.

This radiator, stated to be the only one of its kind with large size steel tubing, was specially designed for bus installation.



Radiating Unit Used in the Petry Bus Heater

The tubing is welded in malleable iron manifold castings in which are inserted removable plugs to facilitate cleaning of tubes.

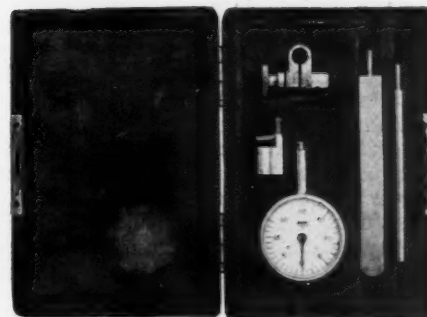
Heat from the motor exhaust gases is utilized by this system, but it is accomplished in such a fashion so as not to prove detrimental to the engine, by causing choking, back pressure or engine heating. This is made possible by the utilization of flexible steel tubing. Sharp angles and pockets, which could not be avoided if ordinary steam pipe was employed, is entirely eliminated by the Petry system of radiation. The feature of the system lies essentially in the construction of the flexible tubing. The tubing is bent to the proper degree for easy flow of the gases. Fittings are made to suit certain conditions.

Heat is controlled by the Tuning-Up valve which is designed so that the gases from the engine are diverted at an easy angle into the heating system. The heat lever which controls the amount of gas to pass through the system is placed at any point on the floor convenient to the driver.

The horizontal type is especially designed for De Luxe coaches. Besides the bus type many different styles of valves are offered by the Petry company to meet any vehicular heating need.

## Federal Gage for Machine Shops

The Federal gage, model 25, newly put out by the Federal Products Corp., 15 Elbow St., Providence, R. I., is a light and sensitive dial indicator useful in machine shops where accuracy is an essential feature. By means of universal attachments with which the gage is equipped the user is enabled to instantly adjust it to any desired position on a surface. It



Case of Federal Testing Instruments

will also be found useful in checking work in lathe, milling machines, grinders, shapers, or planers.

It is furnished in a small leather case which can be very comfortably carried in the operator's pocket. The diameter of the dial of the indicator itself is only one inch, and it is graduated in .001 in., a complete revolution of the hand being the full range, namely, .040 in.

A modern factory branch soon will be established in Cincinnati by the White Co. The building will be 140 x 225 feet in size.

## National Safety Fenders for Trucks and Buses

The National Safety Fender, manufactured by the National Safety Fenders Corp., 1100 Hearst Tower Bldg., Baltimore, Md., is an automatic device for use on all types of motor vehicles. It is attached to the front of the frame and is so constructed that when a pedestrian is struck, a protecting wing and safety scoop are automatically lowered, preventing serious injury by making it impossible for the pedestrian to be thrown or dragged beneath the front



Actual Test  
Demonstrating  
Practicability

wheels. In case of collision with another vehicle the fender serves as a regular bumper.

Operation is simple, quick and automatic. The fender opens the instant a pedestrian is struck. The mechanism may also be tripped by the driver of the vehicle in cases where he sees that an accident is unavoidable. The scoop has a rubber covered band which absorbs part of the shock incident to contact.

The fender is so compact that when it is in a normal driving position it projects very little more than the ordinary collision bumper.

Installation is simple and it is readily adjustable to any type or width of chassis.

Wide spread interest was evinced by delegates, who participated in the recent national conference on Street and Highway Safety, in a demonstration of the Automatic Safety Fender. A man was run down by a car and a truck going at a speed of 18 miles an hour. Instead of being run over by the front wheels the man was lifted clear off the road onto the Safety Fender.

## Purolator for Purifying the Oiling System

Dirty or contaminated oil develops in any crankcase after a few miles of operation, no matter how careful a driver may be or how frequently he may drain the crankcase. Motor Improvements, Inc., Fisk Bldg., New York City, recently placed on the market a device that is claimed to set up a process of oil purification the moment the engine commences to turn over. The device continues to function, and automatically, as long as the engine is in operation.

The Purolator is described as employ-

ing a process of microscopic filtration, not screening, by which every particle of foreign matter is removed from the oil. The device is claimed to postpone the day of engine overall, reduce ordinary maintenance charges and save oil. With the elimination of abrasive dirt from the oil serious wear is naturally eliminated, besides more efficient lubrication is afforded.

From twenty minutes to two hours are required to install the device depending on the type of engine. Engine operation is not affected in any way. Oil is conducted to the Purolator through a bypass in the oil gage line and after it is

## Rhoda-Ford 12-Passenger Sedan Coach

The Rhoda-Ford Sedan Coach, built by the Rhoda Body & Manufacturing Co., Lima, Ohio, was designed especially for a standard one-ton Ford chassis equipped with Olson No. 9 or the Century No. 11 frame extension. Its capacity is twelve including the driver. The wheelbase is 140 in.; outside length, 14 ft. 8 in.; width, from 45 to 52 in.; height, 50 in.; width of doors, 28 in.

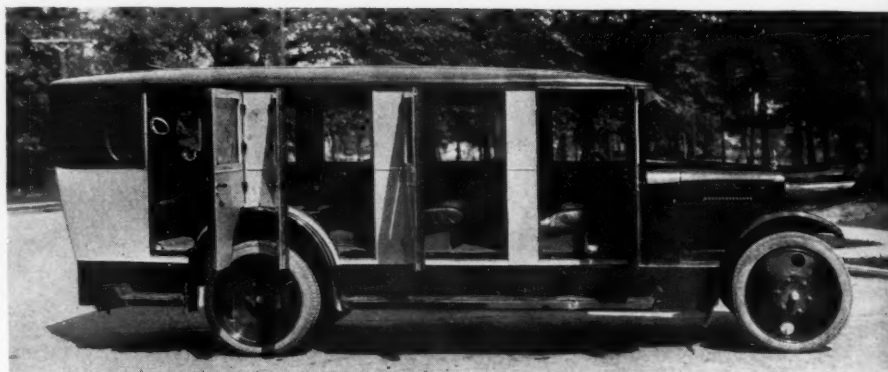
Rigidity is attained by heavy construction of the side-rails of the roof and sills. The overhang type of sills give the body a lower center of gravity and is claimed to eliminate side sway.

The distance between seat back to seat back is 38 in. The seats are tilted at an angle of 112 degrees.

Continuous ventilation is furnished by five ventilators, two under the sun visor, one in the cowl, and two in roof. Illumination is provided by two dome lights.

Entrance is gained through four doors on the right side. An additional door is provided on the left side for the driver's use. The doors are hung with semi-exposed coach hinges to insure a secure fit and are equipped with rubber silencers and weather strips.

The price of the coach complete with



Rhoda Sedan Coach Designed Especially for a Ford One-Ton Chassis



Model Designed for Trucks

cleansed it returns to the crank case. The engine is subjected to no possible injury should the device fail to function the oiling system will continue to work just the same. The prices range from \$15 for a Ford to \$50 for trucks.

chassis, frame extension, and an auxiliary transmission which gives added speed and power, is approximately \$2500.

## Spark Plug Cleaner

The purpose of the Instant Spark Plug Cleaner, manufactured by the Spark Plug Cleaner Co., 109 N. Dearborn St., Chicago, Ill., is to clean spark plugs in a moment's time and without trouble or inconvenience. The actual work of cleaning is accomplished by the engine.

If a spark plug is to be cleaned remove the pet cock or blind plug and replace with the cleaning device. Before screwing in place, however, clean the opening of any carbon that may be lodged there. Run the engine for a moment to warm it up. Then screw fouled plug into the cleaner and open valve of cleaner. Run the engine slowly with spark fully advanced and enrich mixture slightly. The flame which is of a bluish-red hue will burn the plug clean of any carbon, oil or any other deposit in from 10 to 30 seconds. The price of this device is \$2.50.





## Truck Wheels made of Rolled Steel

**B**ETHLEHEM Rolled Steel Truck Wheels are made of Rolled Steel in accordance with designs proven to be correct by authoritative tests and years of experience.

With this distinctive type of construction, wheels are assured of a resiliency that is a positive factor in prolonging the life of any truck by lessening the wear on tires and chassis.

For this reason Bethlehem Rolled Steel Truck Wheels will increase the earning capacity of any truck by adding years of life to its usefulness.

*To insure satisfactory performance, specify Bethlehem Rolled Steel Truck Wheels on your next truck order*

### BETHLEHEM STEEL COMPANY

General Offices: BETHLEHEM, PA.

#### Sales Offices:

New York	Baltimore	Pittsburgh	Chicago
Boston	Washington	Cleveland	St. Louis
Philadelphia	Atlanta	Detroit	San Francisco

# BETHLEHEM

**W**E manufacture and carry in stock Bethlehem Rolled Steel Truck Wheels for 2, 2½, 3½, 5 and 7 ton trucks, made for Timken axles and using solid tires. These have the hubs of front and rear wheels equipped with Timken bearing cups. Rear wheels are assembled with Timken brake drums, and front wheels are furnished with hub caps. Wheels are shipped ready to receive tires and be installed on the truck.

Any other hub cores and brake drums can be made to truck makers' specification and assembled with the wheel when desired.

### Gotfredson Announces New Bus Chassis

The Gotfredson Truck Corp. has brought out a new six-cylinder bus chassis suitable for use in either urban or fast interurban service. To permit low floor height with no obstruction in the center aisle, the engine, propeller shaft and differential are offset to the left of the frame. The frame is unusually stiff not only to support the heavy bodies which will be mounted on the frame but also to protect them from weaving strains. Service brakes act internally on drums on all four wheels and are operated by the Westinghouse air system. The new chassis lists at \$4950.

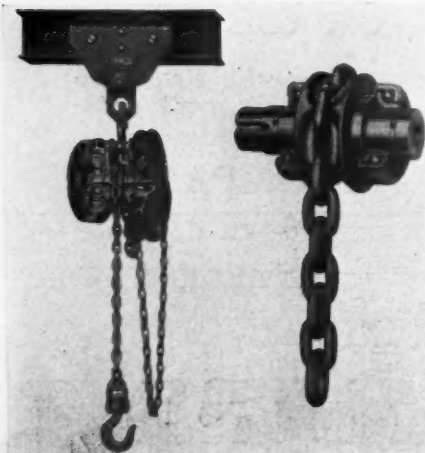
The engine is a six-cylinder Buda with 4 in. bore and 5½ in. stroke and is equipped with Zenith carburetor, United air cleaner, North East starting and lighting, and magneto ignition. The air compressor is driven by V-belt from the water pump shaft. The multiple disk clutch and selective gearset are mounted with the engine to make up a unit power plant which is supported at three points.

The propeller shaft is in two pieces with three metal universal joints. It is supported centrally in and SKF self-aligning ball bearing from one of the frame cross members. The rear axle is a full floating type with taper roller bearings at the wheels and differential, and with SKF annular ball bearings on the wormshaft. Springs are semi-elliptic all around, those at the rear being underslung. The steering gear is a cam and lever type.

The frame side rails have a maximum depth of 8½ in. with 3¼ in. flanges and are pressed from ¼ in. stock. All cross-members are 3-in. diameter tubes with a wall thickness of ¼ in. with the exception of the drop-forged member which supports the front of the engine.

### New Ball Bearing Chain Block

An interesting development in hoisting equipment has just been placed on the market by the Yale & Towne Mfg. Co., Stamford, Conn., in the way of a new ball bearing spur-gear chain block. The design provides for two chrome alloy ball bearings to support the load sheave shaft,



Latest Development in Hoisting Equipment

arranged to take the entire weight of the load and to withstand the shock of all thrust and overload surges. The bearings are located or inclosed in small chambers, and provision is made by means of steel and felt washers to prevent dust and grit from entering the bearings.

Continuous lubrication of the bearings, the driving pinion, shaft and the driving gears, is also another novel feature.

These chain blocks also possess the structural features, such as electrically welded chain, drop-forged detachable shackles, steel safety hooks, which are characteristic Yale Chain Blocks.

The ball-bearing blocks are being marketed in all capacities from ¼ to 20 tons.

### Manley Spring Shackle Tool

The Manley Mfg. Co., York, Pa., just announced a simple and efficient tool very useful in Ford repair work. This tool eliminates the necessity of using hoists, jacks, etc., for removing or replacing spring hangers on Ford cars. With it Ford spring hangers can be changed almost instantly.

With the use of this device it is only necessary to apply the tool by placing



Manley Spring Shackle Tool

the upper jaw between the spring and the axle, allowing the lower jaw to rest on the axle and the extending arm to hook under the radius rod or truss rod. Pressure on the handle until the spring is raised to the proper height permits ready insertion of the replacement hanger.

The tool is equally efficient on front and rear springs. Without handle the tool weighs 12 lbs. and lists at \$7.

### North East Electrical Equipment Catalog

The new North East catalog 100-B just published, covers electrical equipment for motor buses and lists in detail the various generators, starting motors, control units, horns and speedometers which the North East Electric Co. is manufacturing for bus work and also shows the developments that have been made within the past year in this branch of the electrical equipment field. A profusion of mechanical and half-tone illustrations facilitates understanding. Copies can be obtained upon application to the North East Electric Co., Rochester, N. Y.

### New Truck Produced by Selden

The Selden Truck Corp., of Rochester, N. Y., has developed a new 2¼ ton light speed truck which will be placed on the market about February 15. The truck will be offered in two wheelbases, a standard wheelbase of 154 in. and a special wheelbase of 180 in. The price of the standard will be \$2,975 with \$75 additional charge for the special. Complete details will appear in the next issue.

### Plan for Speedy Transport

Shipment of loaded motor trucks by rail between large industrial centers has been suggested by David Halliwell, of the Midland and Scottish Railway, as a new method of co-ordinating rail and highway transportation, according to the National Automobile Chamber of Commerce.

The primary object of the plan is to expedite traffic between points not within easy trucking distance, by eliminating the transfer of goods between rail carriers and motor trucks at terminals and by means of the greater speed attainable on rails.

Mr. Halliwell believes the plan offers such substantial benefits to railroads, trucking concerns and the general public that its adoption should receive serious consideration.

### Shipping Hogs by Trucks Increases

Ninety per cent of the hogs received from within a radius of 50 miles of the Indianapolis stockyards are now delivered by motor truck, according to E. L. Browne, Agricultural Economist of the U. S. Bureau of Public Roads, who has just completed a study of shipping conditions in the Indianapolis district.

The transportation of livestock over the highways to markets where they are butchered has become quite general. In Indianapolis the transportation of hogs by truck has grown up where a steam and electric service unequalled in few agricultural areas has existed for several years, more than 20 such lines entering the city from all directions.

While no comparative figures are available, it is said that fewer hogs die in transit by truck than by rail. This is due largely to the fact that trucked-in hogs move by night during warm weather whereas rail shipments are often loaded and moved during the heat of the day.

### Monitor Edgewound Resistor

The Monitor Controller Co., Baltimore, Md., in its Bulletin 67 describes the Monitor Edgewound Resistor. This new electrical resistor is intended to replace the common cast-iron grid used in electric motor control circuits. As the new resistor is unbreakable, moisture-proof and more compact and lighter in weight than the common cast-iron grid, it is well adapted to use on electric trucks. The new resistor also has a number of other outstanding advantages which are fully discussed in the bulletin.





# A Hard Corner—Easy!

**U**P an abrupt incline . . . . a quick, sharp turn to the right . . . . a heavy car . . . . balloon tires. A hard, dangerous corner for any driver—but taken with ease, assurance, safety and absolute control when the car is equipped with the Ross Cam and Lever Steering Gear. On any road—in any emergency, Ross supplies new and imperative steering advantages.

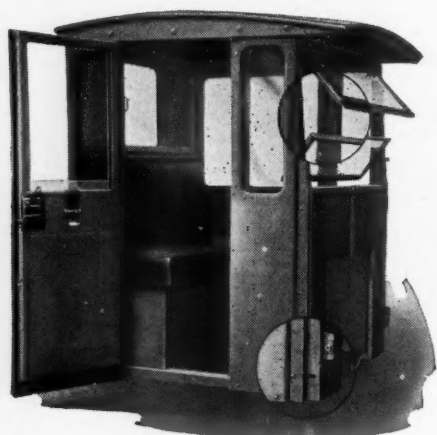
ROSS GEAR AND TOOL COMPANY, 760 Heath Street, Lafayette, Indiana

**ROSS**  
**CAM and LEVER**  **STEERING GEARS**  
**EASIER STEERING LESS ROAD SHOCK**



#### Red Star Bus Line Installs Six Wheel Coaches

Residents of East Lansdowne, Cardington, Fernwood and Yeaton, Penna., are congratulating themselves on the bus service furnished by the Red Star Bus Line operated by Thomas B. Lytle, Philadelphia. Three new, big, Safeway Six Wheelers entered in the service of the Red Star Line late in January. The buses are built with two wheels forward and four in the rear. The four rear wheels are assembled so as to permit them to conform to road irregularities by moving up and down and incidentally considerably reducing road shock. The construction eliminates danger from overturning or skidding. Brake application to all four wheels is another factor of safety.



Durabilt Cab

#### Durabilt Cabs

Health and comfort of the driver which makes for increased efficiency were the factors that governed the engineers in the designing of the Durabilt Cab manufactured by the Sheet Steel Products Co., Chicago. Doors are placed for easy entrance and quick exit from either side, and employment of steel uprights is stated to permit full vision.

Among the features of construction is the frame work constructed of light strong structural steel and sheet steel panels that are wrapped around the angles and die-pressed to conformation and riveted. This construction is claimed to eliminate drumming, rattles and squeaks. The top is of wood slat construction covered with heavy oiled duck. Sides are of hard wood, slats of soft wood placed together (thoroughly braced and reinforced). The doors are of the swinging type and the glass in them raise or lower in felt channels.

Window construction is such that blind spaces are considerably reduced. The posts

## CAB REVIEW

*Completing the Review  
Which Appeared in January  
Commercial Car Journal*

being of steel permits the use of narrower supports. The windshield is constructed of narrow steel moulding sealed with rubber strips. Both sections can be moved either in or out, insuring perfect ventilation in warm weather.

Cushions are deep and comfortable. Spring construction is used in both the seat and back. Imitation leather is used. The seat cushions are in two sections for convenience in getting at the gas tanks, battery and tools.

The cab is adjustable to fit practically any design of chassis.

#### Weatherproof Truck Cab

A considerable advance in the design of truck cabs is seen in the new model "Weatherproof" truck cab, which was recently put into large production by the Weatherproof Body Corporation of Cornunna, Michigan.

The new model is asserted to meet all general conditions and requirements. Standardization on one model (two sizes) permitted savings in manufacturing which are reflected in the price.

Among the outstanding features of construction are the metal framed plate-glass windshield and the rounded corner windows which give great freedom of vision;

## Big Increase in Asphalt Paving Yardage in 1924

Based upon a compilation of information which it has received, the Asphalt Association announces that the yardage of asphalt pavements laid on the streets and highways of the United States during the year 1924 total 118,800,000 square yards. This is an increase of 10 per cent over the yardage laid in 1923. Reports from Washington, Oregon, California, Arizona and Nevada indicate that 72 per cent of all paving contracts let in those states during 1924 were for asphalt and 80 per cent of all asphalt yardage contracted for in the five states included asphaltic concrete foundations.

The Royal Motor Car Company, Newark, N. J., recently bought from the Receivers the Kelsey Motor Company in its entirety, including real estate, factory building, accessories, parts and etc., and are taking immediate possession. Production of the "Light Car" designed by Mr. Romer has started and work will commence on orders that have been taken.



Weatherproof Cab

the sheathing of the entire body in steel for endurance sake; the absence of any loose parts, which prevents rattling; the placing of the doors seven inches back of the usual place to permit driver to get in or out freely from either side; the deep cushion seat with lazy-back; the mortising as well as ironing of joints and corners; the slatted oiled-duck covered roof which prevents drumming.

The makers claim several advantages as a result of this construction, namely: free vision, comfort, longevity, silent operation, and ready access to seat.

In recent development work on a steel corner brace engineers found that a new box-type brace offered certain advantages, but incidentally provided a handy small compartment for tools, shipping books, etc. Two of these braces are used in each cab—one at foot of each front corner post. The box-like steel compartments are about 7 inches high by 5 by 4 and are open at the top.



# Bigger Sales—Quick with the **ACME Flyer**



Trade-Mark Registered U. S.  
and Other Countries

**H**ERE is a new model belonging to a splendid line that is ready to pitch in and build your sales to a quick peak—and keep them there. The new Acme Flyer is not only a business utility for every American highway, but a fast one to pull in the orders. Its dashing, alert appearance and sturdy fleetness are well fitted to the needs of American business today, and fitness for its job wins customers for the Acme Flyer.

In a market of light vehicles that are noticeably inferior, the Acme Flyer stands out, as it makes *quick strides to success*, carrying its dealers with it.

There are 55 features that make the Acme Flyer a great value—all of them real talking points. For instance: Continental 50 h.p. truck motor—the most powerful truck motor built, giving the Acme Flyer a speed of over 35 m.p.h.—electric starting, lighting and generating; loading space 97", turning radius 20 ft., and many other wholly new features.

You may see here just the business booster you have been looking for. When you learn of the Acme Franchise you will be sure of it. The Acme franchise is known to the trade as a great document of fair-dealing to dealers. It makes the profit situation brighter than ever. Drop us a line—no obligation—for full information on the Acme Flyer. The less delay, the quicker the action.

## ACME MOTOR TRUCK COMPANY

621 MITCHELL STREET

CADILLAC, MICHIGAN



*Acme Models for All  
Industrial Transportation*

## Beautiful! But Disappointing

(Continued from page 11)

motor bus production of the future and have sold most of the motor buses running on our highways today.

**And what about the public that visits the national shows!**

One of the big jobs ahead of the bus manufacturer today is to sell the public on the manifold advantages of the bus.

And what better opportunity would the bus manufacturer have to put his product before the public than in connection with the National Passenger Car Shows?

With better highways available today and more being built each year there are thousands of points in this country where independently operated bus lines can be profitably operated. It only remains for someone to start those lines.

Displaying motor buses at the National Shows would mean much to the motor bus manufacturers. It would give them the greatest opportunity of the year to capitalize on the tremendous amount of publicity which is given to the National Shows!

Just think what that would mean to you, Mr. Motorbus Manufacturer!

It would bring your product to the attention of dealers from all parts of the country.

It would make the National Shows real Highway Passenger Transportation Shows!

A big display of motor buses at the National Shows is logical because both types of vehicles are designed to perform a similar service, namely—the transportation of human beings over the public highway.

This year taxicabs were featured at the National Shows—why not the Motor Bus in 1926?

## Changing Annoyance Into Profit

(Continued from page 17)

The dealer who follows this suggestion will at the close of 1925 find that he has satisfied his customers; that he has made quick deliveries, that he has sold many more trucks, that he has reduced his adjustment claims to a minimum and last but not least he has shown a much greater profit.

When this suggestion is first presented to the average heavy-duty truck dealer, his first expression will be "Every customer we have wants something different in the body line." That's the truth, because the customer sells the salesman when the salesman should live up to his reputation and sell the customer. He has everything in his favor—a reduced price due to large production, a quick delivery, a proper distributed load, a body that has been built after careful engineering thought has been applied and usually a better equipment in consequence is obtained and this excuse is a poor way to side track additional profits and better satisfied customers. When the industry was young and there was no

such thing as standard body and cab equipment available, the same thing was said by the Ford dealer, but Mr. Heavy Duty truck dealer please find the Ford dealer who will make a remark like that today—their customers have been educated to take advantage of standard equipment, quick delivery and cheaper production prices—it's a part of the Ford dealer's business and a large part of it. They have it down to a system as was found in the case cited in the early part of this article, and observations taken of the average heavy duty truck dealers throughout the United States is exemplified by the Ford dealer's neighbor with few exceptions.

In conclusion, I wonder how many heavy duty truck manufacturers and dealers have noticed the phenomenal sales records made by two comparatively new bus manufacturers who adopted the policy of selling complete standard units ready to run at a standard list price. This again bears out my statements and applies to a package delivery truck or "what not" as well as to passenger coaches.

## Getting and Giving Service

(Continued from page 14)

bearings and valves and ball and roller bearings I go to them for all the parts I can get from them. I can get these parts for several different cars from the one place. Instead of traveling all over the city looking up parts I go to one jobber and buy parts for all the jobs I have in the shop at the time. Of course I can't get them all there but I can save a lot of time by buying these parts from the jobber. And I am known there. The salesman greets me with a smile and calls me by name. I never have to wait more than a few minutes to be waited on. And I get a discount on all the parts I buy and I have a charge account and can charge my purchases if I want to.

Some of these distributors do not realize how much their rotten service on parts hurts sales later. I fixed a truck for one man and it took just four weeks to get a part for the clutch. It was the only truck the man, a retailer, owned. He had an awful job making deliveries and believe me he certainly "razzed" that truck to everybody. When a woman called up about having her order delivered he would explain that his truck was broken down and the parts had not come and he could not deliver the order until the teamster he had hired to do this work, came along. He vowed he would never buy another truck of that make, and he didn't. And hundreds of people right here in town knew that one truck was not backed by the right kind of parts service. The dealer is not selling many just now. Maybe the factory sales manager would like to know why. He could find out here in five minutes.

Sometimes poor parts service brings its own punishment. Our school board decided to buy a school bus. Every dealer here got busy and tried to sell us his make. Some of the independent repair shops made arrangements for sub-agencies so they could sell a bus, or try to.

And a lot of out-of-town dealers came and put in bids and interviewed the members of the board. I am one of them. One of our dealers invited me to go up to the city and look at a new model truck which had just come in. Well, we went to the place with the \$150,000 stock of parts. I was introduced to one of the officials and he took me all through the place. Showed me the shops and the receiving and shipping departments and then we went into the stock room. "We are proud of this stock of parts," he told me. "We have a complete stock. We can give you any part of this truck from a cotter pin to a rear axle or a frame. Right here in stock." I listened and appeared interested as we walked by the bins, up one aisle and down the other. When we came through to the front I looked at the counter. Just as I had seen it before. One clerk selling parts. Six men waiting in line for parts.

Our board did not buy that make of truck. And some days after the contract was awarded the dealer here asked me why. He asked me if the truck wasn't all right and I told him it was. "Why did you buy a Sixten?" he asked me. I did not have time just then to tell him all about the \$150,000 stock of parts and the two hour waits. And what it would mean to the Board to be held up for parts if our bus did break down. Some time when I meet him I will tell him all about it.

I have to give service and I get service from those who can and will give it to me.

## Vocational Plan Best in Selling Small Trucks

(Continued from page 13)

bring in their senior, who is prepared to answer any question the prospect may care to ask.

Still another reason advanced for having juniors work with the same seniors regularly and call back with them is that they become familiar with the territory and the prospects become familiar with them. It is thought to be better to have the same man call several times on a prospect than to have a different man each time come in and announce that he represents the Federal-Detroit branch. Under the latter circumstance, it is believed that the prospect will begin to wonder why so many different men call on him.

Not only so, but in making the rounds the first time, one has to become familiar with the situation, and this takes time. One must learn where the office is, for example, whom he should see at each place, where to find him, and so on. Many a salesman has cooled his heels in the outer office for an hour, and the man he was waiting to see walk right by him, then some one would speak up and say: "Were you waiting to see Mr. Spiffington?" He was the man who just went out. He probably won't be back any more today."

It has been found, in this connection that where it takes a junior two months to canvass a given group the first time, he can cover the same territory thereafter in about five weeks.





## Human Reasons Behind Garford Excellence

In the mind of the man who really knows commercial cars, Garford Trucks and Coaches occupy a decidedly distinctive place. They have been put there by a definite creative policy pursued consistently for twenty-two years.

We have compiled into an attractive book some interesting and illuminating stories about the men in whose hands rest the administration and development of this policy. Reading this book will give you a better understanding than you've

ever had before of the reasons behind Garford solidity and permanency.

And you will realize better why it is that users who own, and dealers who handle, Garford Trucks and Coaches evince but little interest when someone talks about other similar vehicles at a lower first cost.

This advertisement is printed as a cordial invitation for you to ask us—on your business stationery, please—for our book, "Behind the Garford." You'll find it well worth while.

Busses  
15 to 35 Passengers

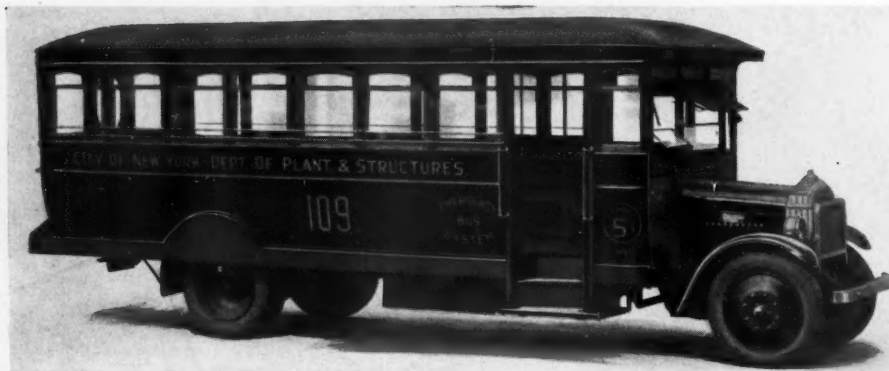
# GARFORD

Trucks  
1 to 7½ Tons

*Beginning in 1902, Garford is now among the eight companies manufacturing 78% of the bona-fide trucks*  
GARFORD MOTOR TRUCK COMPANY, LIMA, OHIO

**BUILDING TODAY FOR TOMORROW'S REQUIREMENTS**

## Ward LaFrance Introduces Its New Model 3B Bus



Latest Design of the Ward LaFrance Truck Corp., Elmira, N. Y.

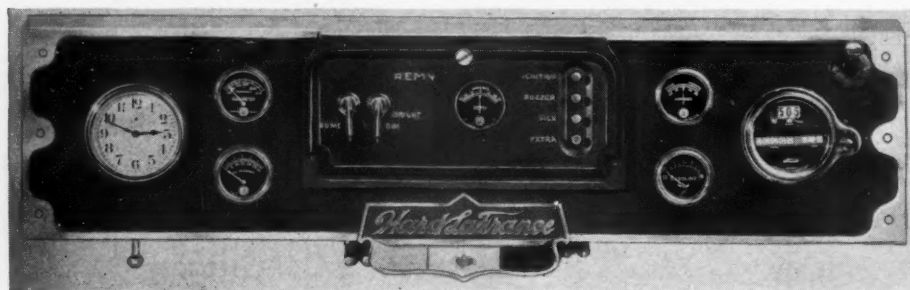
**M**ODEL 3B, the latest bus design of the Ward LaFrance Truck Corp., Elmira, N. Y., has met with considerable favor in New York cross-town service. Several of these new jobs were placed in operation over the 86th Street cross line of the Metropolis. Other districts in this city's net-work of bus lines as well as points in Jersey will be equipped with this model in view of the commendable performance already demonstrated by it.

Designed to carry twenty-five passengers, the chassis is equipped with a special 4-cylinder, Waukesha bus engine with a bore and stroke of  $4\frac{1}{2} \times 6\frac{1}{4}$  in., respectively. The unit is capable of developing 65 hp. Power is transmitted from the engine through a special clutch, consisting of 14 driving disks, to a Brown-Lipe transmission suspended amidships. The gear set is stated to eliminate unnecessary noise by reason of its ground gears. Final drive is through a Timken rear axle.

Temperature in the cooling system is

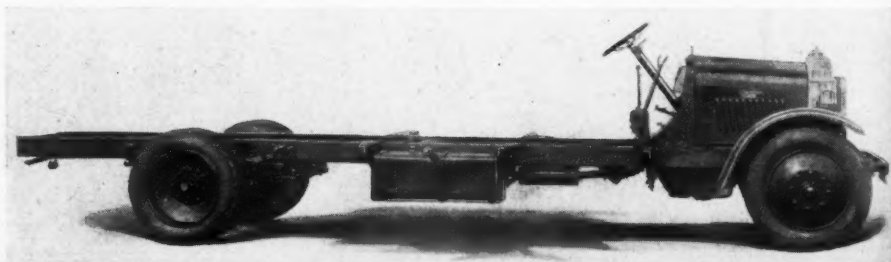
under complete control. The system includes a thermostat, which regulates water circulation, radiator shutters for air control and a Radimeter which registers by means of an indicator on the instrument board the exact cylinder temperature at any time. Other instruments carried on the polished aluminum instrument plate includes two ammeters, an oil-gage, gasoline gage, 8-day clock, speedometer and lighting switches.

The chassis is lubricated by the Myers magazine oiling system, which patent is carried by the Ward LaFrance Corp. This system is designed to obviate the need of frequently oiling chassis parts. The ignition system includes a large sized water proof Robert Bosch magneto. The conventional starting and lighting system which is also supplied from the magneto is independent of the lighting in the bus. The interior of the bus is lighted separately. Two systems, consisting of two generators and two batteries, are employed so that sufficient lighting capacity



Above: Attractive Aluminum Instrument Board. It Includes Two Ammeters, Oil Gage, Gas Gage, Clock, Speedometer and Switches.

Right: Chassis View of the New Ward LaFrance Model 3B Bus. A Feature of the Chassis is the Myers Magazine Oiling System.



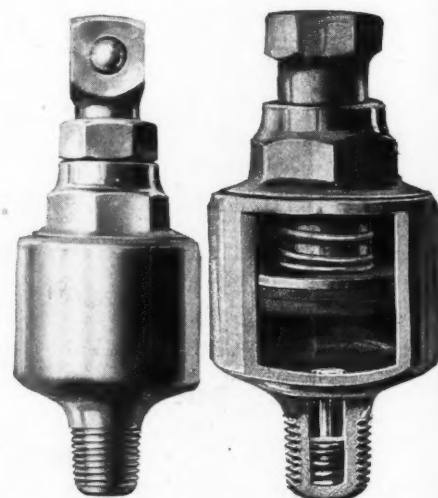
is assured to meet every bus requirement.

Twenty inch drums are used in the braking system, the unusually large braking surface is provided to give the bus the extra amount of braking ability required for bus service.

### National Automatic Grease Cup

The National Automatic Grease Cup Co., 1603 Michigan Ave., Chicago, is offering a grease cup that is designed to supply semi-liquid lubricant to chassis parts at a constant rate, in proper quantities and without waste. One of the features of the cup is the check or control valve which does not prevent flushing of the bearing. A pressure of 200 lbs. permits the lubricant to flow through in the same volume as before the cup was attached.

This cup, which is made of heavy material, screws into the oil-cup holes provided on the chassis. The intake of the fitting may be fitted with attachments of any standard make of grease gun. A dependable gage as to the reserve supply of lubricant in the cup is provided by the



Descriptive Views of the National Automatic Grease Cup

action of the piston. The piston which is forced upward as the cup fills, gradually drops as the cup empties.

The makers state that the cup will hold semi-liquid lubricant enough for two to three thousand miles of operation. A valve is provided to regulate the flow of lubricant, which once set will perform accurately.

One of the chief advantages claimed for this cup is that it makes it possible to supply semi-liquid grease to the moving parts of the chassis.



1925

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